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FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

THIS WEEK

AMIGA
High density drives and a 9Mb RAM upgrade for the Amiga 2000

ATARI
Lynx price cuts and peripherals **PLUS:** new music packages for the ST

PC
First 32-bit Windows compatable software revealed

MACINTOSH
Learn BASIC on the Mac and see Quark battling it out with Aldus and Ventura!

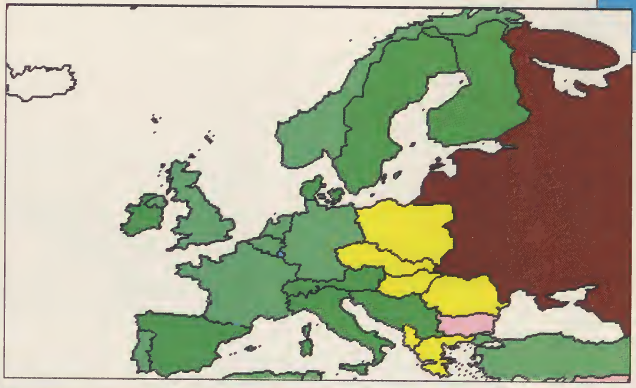
THREE MAC NOTEBOOKS READY TO GO

The new portables that Apple is planning to sell for as little as £1200...details on page 5

GLOBAL MAPPING

Express Test: two interactive world atlases for the PC go head-to-head. Which one wins the geography prize?

Soviet Union
key
Syria
Iraq
Iran
Afghanistan
West Bank
Jordan
Neutral Zone
Kuwait
Bahrain
Qatar
U.A.E.
Saudi Arabia
Oman
Yemen A.R.
P.D.R. Yemen
Index to Southwest Asia



GAMERS

REGULAR TIPS & TRICKS FOR
MEGADRIVE
NINTENDO
ATARI LYNX
GX-4000
& 44 PAGES OF
SHOPPING EXPRESS
BARGAINS !!!

GAME BOY GROWS UP

More than just fun and games: serious software is on the way.

"THEY'RE NO LONGER COMPETITION"

Find out why Commodore thinks Atari's blown it

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frontend

edited by Colin Campbell

ATARI CUTS LYNX TO £99

Atari has announced a new configuration and price tag for its Lynx hand-held games machine.

Buyers will now be able to pick up a Lynx with powerpack, but without any software, for £99. Previously the machine cost £129, but came with the *California Games* cartridge. For the foreseeable future at least, the new configuration will be on sale alongside the £129 model.

There are currently 16 Lynx games on the market, a figure which Atari plans to raise to 50 by Christmas. The average price for a cartridge is £29.99.

Commenting on the move Atari's UK sales director, Peter Staddon said: "Since the Christmas price cut from £179 to £129, sales have been very encouraging and we realised that price had a great deal to do with this. Taking out *California Games* has enabled us to make the psychologically important sub-£100 mark.

"We hope that this move will give the consumer a wider choice of software now that they are not tied to the single initial title. It also breaks down what was one big purchase into a number of smaller ones".

An added advantage is for Atari's relationship with independent retailers. Once a £99 Lynx has been purchased shoppers will turn to the software on the shelves rather than making use of mail order for their games purchases.

Alongside the price cut comes the news of Lynx peripherals. These include a carrying bag, sun glasses, and a power pack which draws on a car cigarette lighter. ■

World's first local paper on CD

Darlington-based morning newspaper the *Northern Echo* is the first local journal available in CD format.

Pre-empting even *The Independent* which offers digests of its news coverage on CD-ROM, the *Echo* launched itself in the high-tech world late last year.

According to head librarian, Peter Chapman: "It's a quantum leap forward. CD-ROM lends itself to this kind of work. We see this as being the way forward for newspapers. It has certainly revolutionised the way we work".

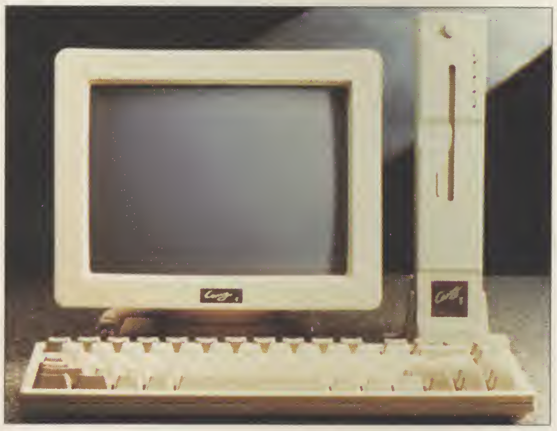
The first CD digest covers major new stories from November 1988. At present there are no graphics involved although plans have already been laid to include images with stories.

To use the disc a 286 PC or better is required, with at least 640K RAM and DOS 3. Obviously you also need a CD-ROM drive. The project is currently backed by Philips using software supplied by BRS. For more information you should write to the *Northern Echo*, Priestgate, Freepost, Darlington, DL1 1BT. If you live in the catchment area for the paper, you are also welcome to pop in for a demonstration of the system. ■

● A new personal pager the size of a credit card is being launched in Hong Kong. The 6mm thick credit-card-sized pager can show 12 digits in its display and receive 20 characters per message.

A memory function allows it to retain up to eight messages. Different tones discriminate between incoming messages and ones for retrieval. The pager from Hong Kong Telecom CSL is available in grey, silver or pastel pink and costs around £120.

Small, but perfectly formed



Boldly claimed to be the world's smallest personal computer, the Carry-I 9000 from Centreprise International is a 386SX PC that is only 1.75 inches thick, 9 x 7 inches wide and weighs in at a mere 4.4 lbs.

With a 9-inch VGA display, 2Mb of RAM and 40Mb disk drive, the Carry-I costs £1,295 and sprints along at16MHz.
More information on 0256 463754. ■

New blood at CBM

Commodore has confirmed that the ex-managing director of high-end PC manufacturer Tandon, Jamie Minotto, will be joining its staff.

Minotto, with his extensive knowledge of the business computing market, joins Commodore as commercial director in charge of PC sales and marketing. The newly created post sits happily with Commodore's plans to increase sales of its business machines.

Persistent rumours surrounding the arrival of Minotto have suggested that his appointment in some way places him as successor to CBM UK's boss, Steve Franklin.

Franklin is making no comment on this and, according to trade magazine *PC Dealer*, he is 'in the mood to take legal action against anyone who publicly repeats current gossip'. ■

As we went to press, no-one at Commodore was available to elaborate on Minotto's arrival.

LICK THAT!

POSTAGE
ONE PENNY
A
A

Diamond Stamp Collector Software System contains everything that the philatelist needs to catalogue and appraise stamp collections.

The stamp-lover's system runs on a PC and contains individual modules to cover the various facets of stamp collecting. It is currently available in the US for $59.95 for the basic software module.

Databases for individual countries can be added. There are currently 17 and they cost $19.95 each. If a country isn't available, the software allows you to build a custom database for it. ■

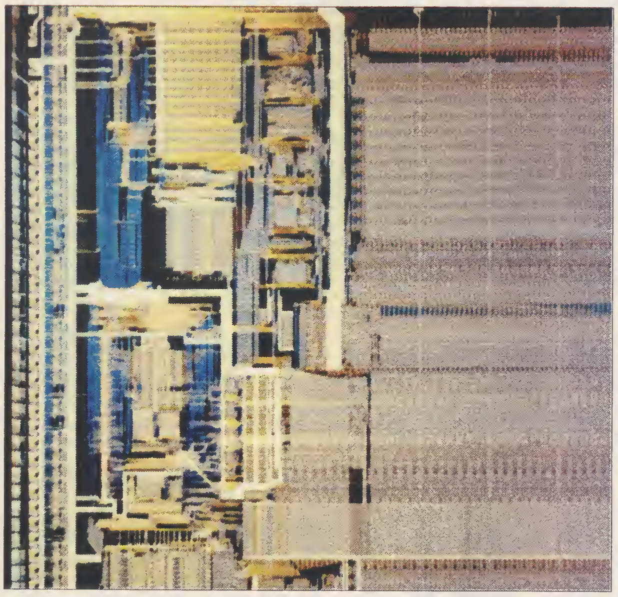
PC photo call for planes

Australian Airline Qantas is using computer images and high speed data transmission to send video images of suspect components to the manufacturers in Cincinnati.

A video camera takes a picture of the offending part or system, which is captured on a PC using a video board. It is then compressed before being sent to America by phone line via the Photo-Phone PC modem.

This way, a full colour image is received in Cincinnati within 30 seconds. Previously, the airline's engineers relied on crude hand drawn diagrams for fault diagnosis and repair. The new system is faster, more efficient and more accurate says Quantas. ■

MASSIVELY PARALLEL

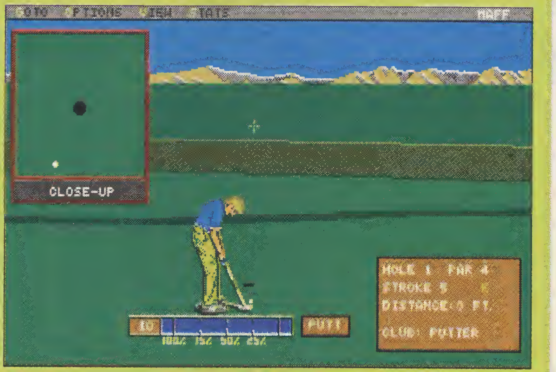


No it's not a detailed streetplan of Los Angeles in the 22nd century – this is the W4X64 – a superchip that features the highest performance floating point processors ever produced on a single slab of silicon, according to its makers

Manufactured by Weitek, it blasts along at 100 MFlops, offers three 64-bit ports, and is intended for use in realtime CAD, graphics and 3D modelling.

Weitek is talking with developers interested in including the W4X64 in the laser printer and desktop PC markets - not just the 'deskside to massively parallel computer segment' as it describes the chip's main market. ■

On tour with the Amiga



PGA Tour, the stunning golf sim from Electronic Arts, which has already wowed many PC players is due for release on the Amiga and the Sega Mega Drive in March.

Officially endorsed by the US PGA Tour, the game pits up to four players against 60 of the world's top professional golfers including Fuzzy Zoeller and Paul Azinger.

Rounds take place on realistic simulations of courses actually used on the real-life tour, including Stirling Shores, Avenel and the PGA West Stadium. A leader board keeps you in touch with how well or how badly you are doing compared with the competition.

Among the special features are overhead views of the course provided by a helicopter-mounted camera. There are instant replays of your best shots, or even those two-yard drives from the 5th. Before you get to the tournament proper you can sharpen up your skills on a driving range and a putting green. You can choose your clubs from full bag of woods and irons, and when playing you have to take into account the lay of the land and the wind speed.

PGA Tour will be out in March at £24.99 for the Amiga and £44.99 for the Sega Mega Drive. ■

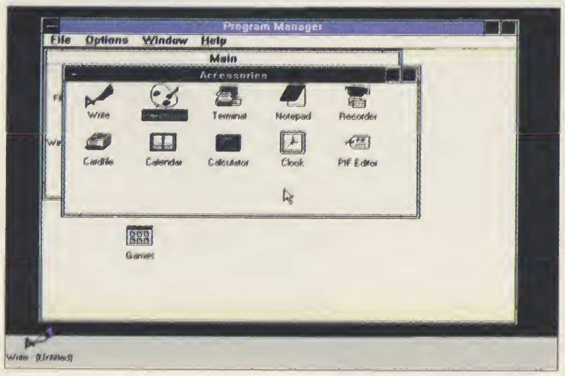
Write-on screen operating system

While reports of the death of the keyboard as an input device are probably premature, Microsoft has already demonstrated the possibilities of a user-friendly alternative that allows you to hand-write your instructions to a computer.

'Pen Windows', a version of the Windows operating environment, was demonstrated as part of a presentation on Multimedia.

The system allows the user to write on the screen with a stylus and software scans the script, translating it into ASCII text. The user can employ familiar and intuitive penstrokes - such as scoring through a word on screen to delete it. ■

● Make sure to read *Express* in a couple of weeks for a review of the GRid Pad. This is a heavy duty hand-held computer from military specialist GRiD that allows you to write directly on to the LCD screen by way of a pen.



• Windows - soon to be part of a Windows, Icon, Mouse and Pen interface?

CONTENTS

FEATURES

MSX
With bad new from Japan we ask the head of the UK MSX user group, "Whither the MSX?" – page 8

On top of the world
We navigate around two interactive global guides for the PC – page 62

REVIEWS

Game Boy
The handheld games machine shows that it has a serious side too – page 10

ST Series
Three of the best budget scanners for the ST are given put to the test – page 61

Amiga Series
Damien Noonan conducts around the Amiga's music and MIDI side – page 64

EVERY WEEK

Games Week
Hot tips and news, plus Lemmings review – page 58

News – pages 4-8

SHOPPING EXPRESS

Letters 13
Mac 16
CPC 17
Amiga 18
Archimedes 20
PC 21
C64 22
Spectrum 23
ST 26
Whole Wired World 32
Centrefold 35
Circuit City 36
On-line 44
Tech Tips 46
Programming 51
PD Column 54

Secret US RISC talks

A secret meeting between Microsoft, Compaq and Digital Equipment earlier this year was aimed at creating a new RISC-based personal computer.

Sources report that the get-together held in California agreed to define a standard aimed at replacing limited and outdated MS-DOS systems.

The MS-DOS platform, old-fashioned from its conception, has become increasingly dissatisfying to manufacturers with the arrival of alternative platforms from Sun, NeXT and Acorn.

News that Apple and Acorn are collaborating on a separate RISC project reinforces the idea that RISC technology is on the ascendant.

It is likely to be some time before anything concrete is seen because of the time and expense necessary to develop operating system software from the bottom up. Support will also have to be won from third-party developers, and users convinced that a new system offers sufficient power to warrant a change.

The implications for Acorn's Archimedes – the only readily available RISC based PC – are not good. Acorn, which pioneered the RISC PC, is now facing the possibility of being overtaken by companies with considerable muscle.

Radio net arrives

Lex Industrial Systems has introduced a range of wire-less computer terminals that can be switched between four different standards of host by pressing a 'hot key'.

The LXE wire-less terminals can communicate via radio signals with computers linked on an Ethernet network.

No special software is needed for installation. The terminals come in top, truck mounted and held-held versions. Prices start at £2,600.

Contact Lex at Free Press House, Castle Street, High Wycombe, Bucks.

CD Proof

Nimbus Information Systems, has announced Proofdisc, a means of mastering CD-ROMs for as little as £350.

The system allows 24-hour turnaround and should enable companies to proof CD masters before the duplication run is undertaken. Additional masters cost £100.

For details, contact Nimbus on 0600 890682.

New ST bundle based on MIDI

ST distributor Silica Systems has put together a £499 music pack which bundles the the STE1040 with a copy of Steinberg's *Pro24* sequencer.

The *Pro24* sequencer is already very popular with profession musicians, and Silica's move is likely to establish the package in the home.

• *The STE's new MIDI bundle*

As the *Pro24* program costs £150 to buy separately, Silica is offering would-be musicians a sound reason to buy an ST.

For more information call 081-308 0888.

Laptop promo

In the first of a promised series of promotions, Amstrad is bundling the Canon BJ-10e printer with its ALT 286 and 386 lap tops.

The promotion is scheduled to run from now until the end of March, and offers the £345 Canon bubblejet printer as part of a package – priced at £1,599 with the 286 ALT, and £1.999 with the 386.

"These products are made for each other," Amstrad's managing director Barry Young told industry paper *CTW*. "We have some super promotions lined up at the moment," he added.

Sony and Nintendo join forces for a new CD standard

JAPANESE ALLIANCE CHALLENGE CDTV

In a move which is certain to send waves throughout both the consumer electronics and computer industries worldwide Sony and Nintendo have joined forces to further develop the Super Famicom.

The two companies have agreed to develop an CD-based audio-visual device to compliment Nintendo's family computer. Although the as yet unnamed add-on will make use of CD-ROM, international wire service reports state that the companies are developing an entirely new standard for the technology. This is known as the Sony Nintendo format.

• *The Super Famicom. New developments from Japan could threaten CDTV*

The new CD-ROM drive will be attached to a home TV set via the Super Famicom and will allow high-quality music and graphics to be played. However, games software will not be the sole product to be seen on the machine. Both parties have plans to further develop their respective serious business and educational product lines.

This is a logical progression from Sony's Data Discman which already allows the user to access database and text-based software. Nintendo has also launched business oriented software and hardware for its consoles, and has firm plans to change the image of its machines from simple Mario-mobiles to multi-media products.

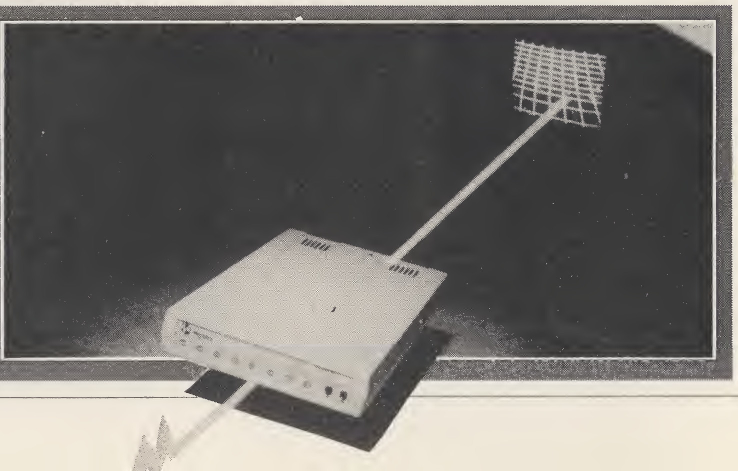
Tom Sariff, a spokesman for Nintendo in the United States, remained cagey about the affair, telling *Express*: "The relationship between Sony and Nintendo is so new that there's really not much that I can say. It certainly is an interesting combination when you put the two leading electronics names together".

It is understood that no international standard for a CD-ROM project such as this has yet been defined. What is unquestionable is that the first major player to sell a product in volume to the mass market will be the one which defines any standard. Once this occurs, that company or group of companies will create an effective stranglehold for the future.

If the Sony/Nintendo axis achieves this then Commodore's CDTV project will be seriously jeopardised. Kelly Sumner, Commodore's UK sales manager had the following to say about the announcement: "We are aware of the project and we're keeping a close eye on developments but we're not unduly worried".

Modern modem

Mercury Communications has announced a new V32 modem designed to give comms users even greater benefits from the company's phone lines which are some 25 per cent cheaper than arch-rivals British Telecom. The V32 incorporates the latest V42 bis data compression standard and, along with Mercury access, costs £1,030. A V22 version is £570. Phone 071 528 2547.



Portable revamped as new notebooks are planned

MAC NOTEBOOKS DUE FOR RELEASE

Sources close to Apple in the States have revealed that the company is planning to release three notebooks later this year ranging in price from $2500 to $5000.

Portable versions of the Mac Classic, the LC and the IIsi are all expected later this year.

A4 lightweights based on the 68030 and 68020 processor versions of the Mac IIsi and LC respectively, are apparently pencilled in for a September launch.

With an expected price of $4,800, the IIsi-equivalent notebook will ship with 2Mb of RAM and a 40Mb hard disk, weigh seven pounds and will be 9.5 x 11 x 2 inches thick. With an enhanced Active Matrix LCD screen producing a high resolution black and white display, the IIsi notebook will also incorporate a trackball, keyboard and 1.44Mb floppy drive.

The $4000 LC version is expected to offer similar specifications, except that its screen will be a cheaper Supertwist LCD display.

Both machines will operate on internal batteries for up to three hours and allow users to add additional memory and 2400 bps modems.

A 68000-based Classic-equivalent notebook is apparently scheduled for the bottom of the new notebook range. Only 8.5 x 11 x 1.75 inches thick and weighing 5.5 pounds, the predicted price for this machine is under $2,500 (£1,250), even though it is said to include a 40Mb hard disk as well as 2Mb of memory.

Interestingly, no floppy drive will be fitted as standard to the Classic notebook, but a built-in modem, SCSI and serial ports will allow file transfer to and from host machines. Sony is currently manufacturing this notebook at one of its Tokyo installations on Apple's behalf.

PORTABLE UPGRADE

Meanwhile, Apple has just introduced several improvements to its existing portable, that take immediate effect.

The machine's Active Matrix Liquid Crystal Display screen is now complemented by user-adjustable backlighting. Apple claims it delivers up to five times the performance of standard LCD screens, and enhances contrast over a wide range of viewing angles.

• The Macintosh portable – now with more memory and a better screen

Apple has also dropped the price of the basic machine by £200 and added RAM. The machine is now able to take full advantage of the imminent System 7.0 operating system that requires a minimum of 2Mb to be fully effective.

Including VAT, the entry-level portable with 2Mb of RAM and a 40Mb hard disk now costs £3087, while a 4Mb RAM version retails for £3283. Both can be upgraded to 8Mb with third party RAM cards.

People who already own an Apple portable can upgrade their screens to the backlit version for £627 inc VAT.

For more details, dial 100 and ask for Freefone Apple.

Windows upgrade

Microsoft is planning to launch the first upgrade to its Windows 3.0 user interface in the early summer.

Windows 3.1 should retail for £99+VAT and is scheduled for a June release. Among the 3.1 enhancements are an improved FileManager, support for the TrueType typeface standard, an improved Dynamic Data Exchange (DDE) and the ability to reconnect to networks automatically on start-up.

The improved DDE is called Object Linking and Embedding (OLE) and means that files can be placed inside other files while maintaining their dynamic relationship. In this way you would be able to work on a spreadsheet-created chart while it is embedded in another file.

DOS 5.0 may well be required to run the interface system.

SNIPPETS

- **IBM has developed a low-cost way to make miniature lasers for use in Compact Disc players, laser printers and computer storage devices. The technology could even lead to a new form of laser computer. IBM will be able to make these new lasers in batches of 20,000 units at half the manufacturing cost of current devices. They could be on the market by mid 1992.**

- **California-based Velox Computer Technology has produced the IceJet circuit board which it claims will 'turbocharge' the powerful 486 chip from Intel. By chilling it to freezing point, a speed increase of up to 50 percent can be achieved.**

- **Kevin Parker, associate professor of electrical engineering at the University of Rochester in America, has developed a halftone algorithm for laser printers and fax machines which is claimed to speed up photograph processing by a factor of up to up to 47. As an added bonus, quality is improved – the algorithm can eliminate moiré patterns.**

- ***Braincel*, a neural net program from Promised Land Technologies in New Haven, hides inside a spreadsheet and 'sniffs out' relationships between words or numbers. The program has already been trained to track down common patterns in data on leukemia patients and predict the chances of getting on specific airline flights with standby tickets. The first $249 version of *Braincel* is only compatible with the Microsoft's *Excel* spreadsheet.**

• The DD120 and DD200 – More than just electronic address books, according to Triumph Adler

Names, addresses – and hard sums too...

Launching two new battery-powered pocket databases, Triumph Adler claimed they are more than just electronic address books.

The 32Kb DD120 and 64Kb DD200 both have six line displays. The smaller machine will fit 16 characters to a line while the larger can handle up to 32.

Features include a notebook mode, which turns the machines into digital jotting pads with calculators and currency and measurement conversion functions. The battery life is around 60 hours and both units come with back-up batteries supplied.

Data from the DD200 64K machine is transferable to other personal computers via a cable attached the the RS232 port.

The DD120 retails at £69.99 while the DD200 will set you back £129.99. ■

Amstrad's ups and downs

Amstrad last week boasted improved profits for the six months to December 1990, but Britain's biggest operator in the low-to-middle end computer market has suffered a 12 per cent drop in sales.

Amstrad boss Alan Sugar immediately blamed the recession and Gulf War nervousness on the slip. Sales dipped from £373.3 million for the same period in 1989 to £326.6 million. Profits climbed from £30.1 million to £40.1 million.

Sugar said that sales had suffered on the continent because of the Gulf War and pointed to a disappointing December.

"We have no idea how long this situation will last. We have to avoid risks," he said, "The computer market is going through a shake-out where only the street-wise and mean and lean will survive."

THE WEEK IN VIEW

Tony King of Extendor questions the quality of military simulations.

Simulators are an important part of the computer revolution. From the comfort of an armchair, you can play the part of one of the great generals, re-write the course of history, go 'downtown' in an A-6 to Hanoi, destroy a convoy in a deadly game of cat and mouse with its escorting destroyers – and all before bed-time.

But simulator players always want more. We play these games because we want to be there, we all want to be the heroes of the hour. Simulators have improved dramatically in what is only a very small space of time. Just compare the difference between *Battlezone*, and *M1 Tank Platoon*, between *ACE* and *Falcon*. Now they are set to improve even further.

How many simulator players would sell their loved ones for an hour on a 'proper' combat simulator such as the military and commercial hardware that trains our armed forces and civil pilots? Although it might sound impossible to convert a simulator that runs on a system with 16Mb of memory, 500Mb of hard disk storage and a 25MHz processor to home computer, the Israeli airforce is now using a pilot trainer that is powered by an A3000 networked to Amigas.

Even a small portion of a current military combat simulator would provide the ultimate combat sim for users of home computers.

After all, even military simulators did not start life as high-end dedicated graphics workstations, therefore, why don't software houses licence simulators from 5-6 years ago? And surely a simulation licence from Marconi or British Aerospace will have additional selling clout. I can just see the boxes now ... General Dynamics presents *F-16 Falcon*, licensed for home use!

The ability to network machines adds an even more exciting scenario. One player gets to be a fighter controller, two other players get to be fighter pilots. Why not link them all up by modem – the technology already exists.

And there's no reason to stop at aircraft. Similar techniques could be used to simulate tanks, ships, submarines: the military simulators exist and the possibilities are endless.

So wake up software houses, and look at the high-end chart positions that simulations enjoy. Give us what we want: games so real, you can smell the cordite!

Citizen puts colour into schools

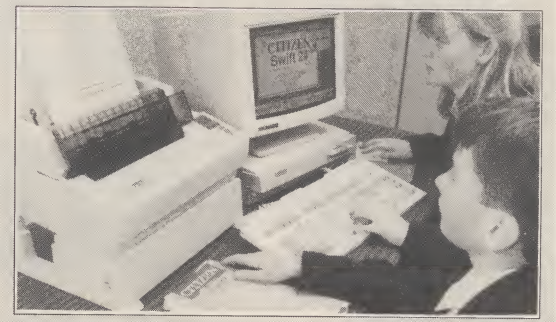
According to Citizen, sales of its colour printer driver for the Archimedes range are soaring thanks to its success in the education market

Many education authorities, including North Yorkshire, Lincolnshire, Nottinghamshire and Manchester, have already invested heavily in the drivers, and Citizen claims many more are on the verge of bulk purchases. The company confidently expects to exceed its annual sales target of 1,500 units by a comfortable margin.

Launched last year, Citizen's driver was the first for Acorn computers. Costing £60 for a multi-user licence (£12 for a single user), it placed professional-standard colour printing within easy financial reach of most schools.

The driver allows Citizen's Swift colour printers to be linked to any Archimedes computer. Compatible with the RISC operating system it can be used with all standard software packages including *Draw*, *Impression* and *Acorn DTP*.

For further details contact Citizen on 0895 72621. ■


• Citizen, bringing affordable colour Archimedes printing into schools

Fax modem for lap tops

A new chipset for laptop computers doubles as a modem and fax card.

The Rockwell RC9624AC chipset can operate as a 2400 baud data modem and a 9600 baud, group three fax modem. The data modem offers V42bis and is claimed to provide an effective quadrupling of speed over similar systems, when connected to another V42bis system.

As well as the space saving gained by incorporating these functions on two chips, less power is required, which will be a boon to owners of battery-sourced laptops.

This low-cost chipset could mean that manufacturers will soon be offering lap tops that include a fax modem – without having to increase their prices significantly.

Support for the first home computing standard wanes

SONY SNUBS THE MSX STANDARD

News from Japan this week could herald the demise of the first workable standard for home computers.

After eight years of development and support Sony has withdrawn its backing from MSX.

This leaves only two of the ten original developers, Matsushita and Sanyo, in the arena. It is likely that Sony's decision will affect both companies' resolve to continue with MSX.

Sony was one of the first licensees of the original MSX standard in 1983. Since then it has taken an active interest, producing machines based on the newer MSXII and II+ standards.

Now Sony has turned its back on the latest update – MSX Turbo R. Its preference now is the AX standard – seen as equivalent to the PC – which leaves Matsushita, under its Panasonic brand, as the sole proponent for the MSX Turbo R.

MSX was conceived during the early 1980s, when the consumer was faced with a host of products which were totally incompatible. The Japanese alliance envisioned MSX as a way of ensuring portability for both software and hardware between different platforms.

While MSX provided a core standard, it still allowed manufacturers to differentiate between their machines; Yamaha's music MSX, for instance, is still praised by musicians for its facilities.

Attempts to popularise MSX in the UK were led by TV rental company Granada which offered a range of machines for rent alongside video recorders, but MSX never became mainstream.

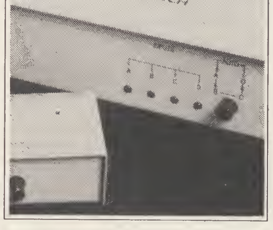
Avidly supported in the UK by user groups, MSX would appear to be moving firmly towards becoming a historical curiosity rather than a format with ongoing development prospects.

• Turn to page 8 for the user's view of the future of MSX.

'Simple' solution to a printer link

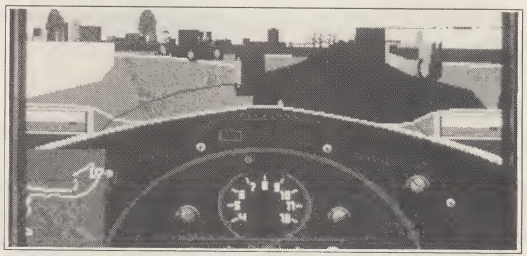
Simple-4-Switch, from Micro Control Systems, is a simple device for linking up to four computers to a single printer.

Available in serial and parallel versions, it can be used with printers, plotters and lasers. In automatic mode it checks the link to each computer for incoming data. Four LEDs indicate which is currently live. If there is any data, the device locks onto that computer until the information has been printed. According to the company, the switching system automatically deals with multiple print requests, putting queued data on 'hold'.



• *Four into one does go...*

Simple-4-switch retails for £129 plus VAT. Contact MCS on 0602 391204.


• *The racing challenge: can you break Andretti's course record?*

Racing the professionals

From gritty dirt bullrings to the high speed thrills of a Grand Prix, *Mario Andretti's Racing Challenge* for the PC gives you the opportunity to relive the career of one of the world's greatest all-round racing drivers.

Electronic Arts has teamed up with Andretti for a game in which, as well as driving, you have to find sponsors and manage resources.

All Andretti's favourite courses, such as Ascot Park and Monte Carlo, have been included, and the man himself crops up from time to time to give you advice. It's due for release in March, priced at £29.99. ■

New Amiga bundle planned. 'ST no longer a threat'

FAMILY BUNDLE FOR THE AMIGA

Following an interview with Commodore's national sales manager, Kelly Sumner, *Express* can reveal CBM's outline plans for a new, mass-appeal Christmas 1991 Amiga 500 bundle.

• Kelly Sumner, Commodore's national sales manager speaks out.

Sumner explained: "Previous packs have been more male oriented insofar as the games have been shoot-'em-ups and games that involve killing and chopping heads off. The way we're viewing it at the moment is that the packs we're putting together should appeal to as many members of the family as possible. We're not just going to be aiming at the 14 to 18 year olds".

Commenting on the means of achieving this wide appeal, Sumner gave a side glance to arch-rivals Atari. He said: "It's difficult to accomplish this as we're not going to be putting 20 pieces of software in there."

This move away from straightforward games towards a pack with appeal for all members of the family is a move to widen the audience for the Amiga.

As to the number and titles of the software to be included in this 'Family Pack', Sumner remained cagey: "All of them have been confirmed, but I can't tell you what they are. Even the publishers I've negotiated with only know their own products. It is that important to us. The only people who know the details are in Commodore".

This strategy can be seen as an attempt to reposition the Amiga both in the market place and the public mind. Following hard on the heels of Atari's £100 STE price cut announced last week it appears that a battle royal is brewing for1991/92.

Commenting on Atari's last move, the STFM price cut, Sumner spoke strongly: "When they went down to £299.99 our immediate gut reaction was 'This is going to be bad news' but when we sat down and thought about it, the general consensus was that this is actually good news. By them going to £299 and us at £399 what they're actually saying is that the Amiga is £100 better, it's a brand leader. They put themselves in the position where they're not even in competition anymore.

"We're obviously not going to dismiss anything they, Amstrad, Nintendo, or Sega do, because in business you have to look at all aspects. But they're not the competition they used to be".

Currently, it's a good time to buy an ST or an Amiga. The STE has just had a price cut to £299, while Commodore's own trade-in deal due to end on March 31, sees the Amiga 500 effectively dropping to £329. ■

● A more in-depth version of this interview during which Kelly Sumner spoke freely about the future of the Amiga in the light of CDTV, how Commodore sees the competition, and what software you could expect to be running over the next few years, will appear in next week's *Express* Amiga Supplement.

Computer criminals given an easy ride

Even though British industry is losing hundreds of millions of pounds a year as a result of computer crime, it is doing little to protect itself, according to a new survey. Nearly one in three companies still have no clear policy to protect data from hackers.

A survey conducted by Gallup for *The Which Computer?* show revealed that 10 per cent of recipients were totally unprotected, while 20 per cent had no anti-hacking policy. Nearly half of the companies interviewed hadn't heard of the Computer Misuse Act, although almost two-thirds believed they would fall victim to hackers in the future.

Hacking is still seen as an international, rather than a British phenomenon, and it seems that what security there is rests heavily on password systems – only two thirds of those questioned used specialised software and virus protection products. ■

The PC Video Toaster

Sony is about to launch the PC's answer to the Amiga Video Toaster.

Called the V-box it will retail at just $250 (around £130) and is aimed at amateur Camcorder users who want to give their home videos a more professional look. The adapter can feed glossy titles and illustrations created on a PC onto any ordinary video image.

The adapter is based on a new standard developed by Sony. Called the VISCA protocol, it is designed to allow a variety of audio-visual equipment, such as VCRs, laserdisks, video cameras and TV monitors to be linked together via computer. ■

Fair for enthusiasts

The ninth All Formats Computer Fair will take place at the New Horticultural Hall in Westminster, London on 23 March.

The organisers promise the same diverse mix of stands which has made previous events successful; companies selling everything from Game Boys to 386 PCs will be there, as well as user groups, clubs, fanzines, PD and shareware libraries. The event is targeted at the enthusiast, and bargains galore along with many rare and unusual items should be on offer.

On the day, doors will be open from 10am to 5pm. The entrance fee is £3.

For advance ticket information or to book a stall, contact John Riding on 0225 868100 . ■

Free data on-line

Business On-Line has launched a free electronic information service designed to encourage businesspeople to make use of on-line facilities.

The service can be accessed using a PC, a modem and standard Prestel videotex communications software or a dedicated Prestel-type terminal. Other than that, the only cost incurred is the price of the telephone call.

The service includes information on the AA, DTI, CBI, and Saatchi and Saatchi. "It turns the VC or videotex terminal into a huge electronic library." says a spokesman for the company. The one drawback is that users will have to put up with the on-line advertising which will be funding the service.

Business On-Line can be contacted on 071-738 6262. ■

Portable 486s due for June

The first 486-based laptop computers could be available before the end of the year.

Intel is rumoured to be ready for a summer launch of a specially-designed low-powered 486SX chip. But the US company is remaining tight-lipped about the existence of the device.

These 486 chips are currently in development at several sites, and high-power portables are imminent. Considerable competition for Intel is already looming, with both IBM and Advanced Logic Research (ALR) planning to announce their own launches as soon as a concrete release date is announced by Intel.

According to ALR's marketing vice president David Kirkley: "ALR will have one ready the day Intel announces its product." ■

New ST desk accessory

A new package called *Expos* allows ST users to load graphics files directly, without launching the application that created them.

The software operates from the ST's desktop and comprises a notepad and GEM graphics window. By pointing and clicking, users can browse through picture files at will.

According to the developers, Maxwell CPU, low and medium-res images are automatically loaded as high-res, and most major file formats are supported.

Further details from Maxwell CPU on 0101 303 666 7754. Price is $39.95. ■

After Sony's decision to pull out of the MSX format, Express asks:

MSX: IS THE END ABOUT TO COME?

by Keith Neal of the MSX User Group

An announcement was made by the Sony Corporation this week that could mean that the MSX system as a standard for home computing is now well and truly dead. Sony announced that it will not be producing the latest generation MSX machine, the MSX Turbo R. The decision not to produce the 16-bit MSX micro must have come as a bit of a blow to all those users who have kept faith with the format.

Sony MSX 2 owners will be especially upset – I know many of them would like to upgrade to 16-bit, yet still be in a position to use their existing software.

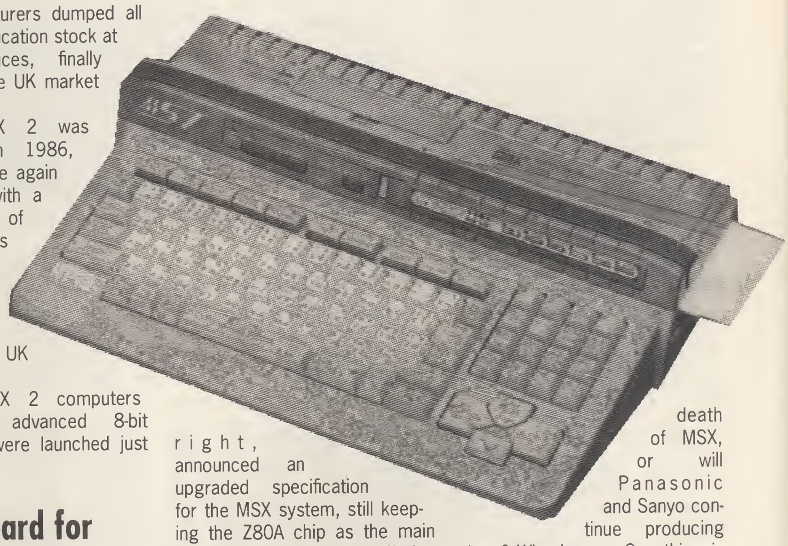
As most avid computer users will know, Sony was one of the first companies to take out a licence with the producers of the MSX format, Microsoft and Ascii. The MSX standard, which was first devised in the early 1980s, was rapidly adopted by many of the world's largest electronics companies, including Philips, Sanyo, JVC, Pioneer, Panasonic, Yamaha and, of course, Sony.

When MSX was launched in Japan in 1983, the format did well. Indeed, 300,000 machines were sold in the first three months. The success was partly due to the special features that manufacturers added to their machines to give them individuality. Sony launched its Hit Bit computer with a built-in personal data bank, useful for storing data such as addresses and telephone numbers.

Another plus was the build quality of the machines; the failure rate of MSX micros is extremely low. This success gave Sony the encouragement to launch the format in Europe the following year. But as we all know, the launch in the UK failed miserably, 1984 being a disastrous year in the computing world in general.

> **MSX as a world standard for home computing was laid to rest several years ago**

Sales of MSX micros in other parts of Europe were reasonable, enough at least to keep companies such as Philips and Sony interested in the market. Holland, Spain and Germany all proved reliable customers for the MSX producers. In the UK, MSX manufacturers dumped all their UK specification stock at ridiculous prices, finally abandoning the UK market altogether.



When MSX 2 was announced in 1986, Sony was once again at the fore with a range of machines some of which were launched in Europe – but never in the UK officially.

These MSX 2 computers were very advanced 8-bit micros, but were launched just as 16-bit was becoming the byword in home computing. Sales were not as good as expected and Philips pulled out of MSX in 1988, Sony virtually going it alone in Europe.

In 1989, Ascii, by now the sole owners of the MSX copyright, announced an upgraded specification for the MSX system, still keeping the Z80A chip as the main processor, but offering advanced graphics and sound capabilities. This gave a display that could rival, if not better many of the 16-bit machines., and was to be known as the MSX 2 Plus. Many MSX 2 users upgraded their machines to this specification – the Sony machine proved particularly easy to upgrade.

But towards the end of the 80s many companies dropped out of MSX production, with Matsushita (Panasonic), Sanyo and Sony being the only companies to keep faith with the format, and release MSX 2 Plus machines.

In the autumn of 1990, Ascii released details of a yet more advanced specification for MSX, this time utilising a new 16-bit processor called a R800 chip which supposedly runs at five times the speed of the Z80A. Add extended memory and PCM sound, and you have a computer that can easily match the Amiga and Atari ST, and beat them in many respects.

Matsushita was the first to launch a machine built to this specification; not MSX 3 as you would expect, but MSX Turbo R. Sanyo is yet to make a decision on producing this machine, Ascii must be disappointed, if not a little shocked, to learn that Sony is not going to adopt the system and will instead concentrate effort on producing PC compatible machines.

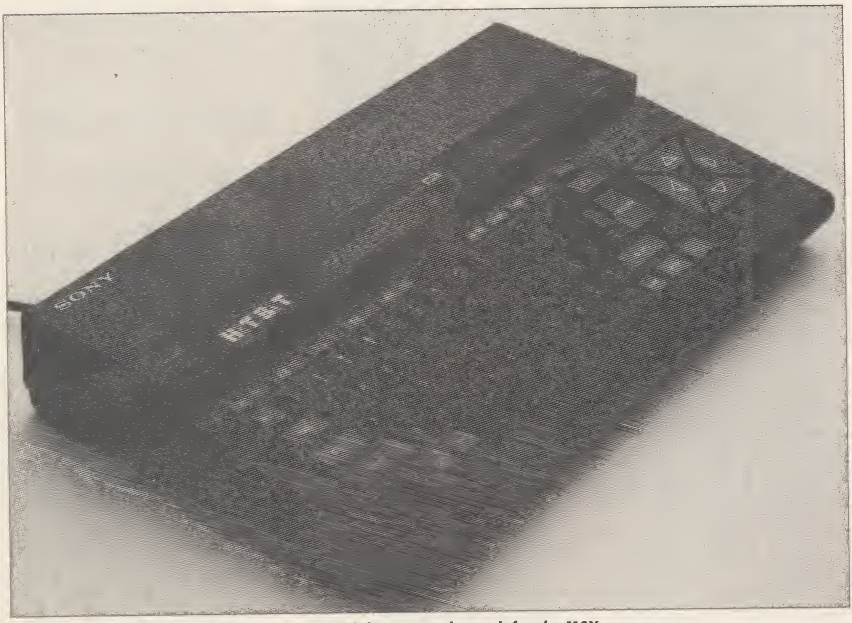
Does this decision spell the death of MSX, or will Panasonic and Sanyo continue producing them? Who knows. One thing is for certain, though; MSX as a world standard for home computing was laid to rest several years ago.

MSX users must not be too dismayed with this news, because as long as one company finds it profitable to support the system, the format will survive. After all, Commodore is the only company making Amigas, only Atari manufactures STs and Matsushita, which still supports MSX, is one of the world's biggest electronics companies.

> **As long as one company finds it profitable to support the system, the format will survive**

Maybe Sony's decision is good news for Matsushita. But I know one thing; I'm sorry to learn that Sony is abandoning the format.

At the MSX user group, we are not waiting with baited breath to see if Matsushita will follow Sony's lead and forget MSX for the PC market. ■



• Panasonic and Sanyo are the only companies left to carry the torch for the MSX.

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BUSINESS MIXES WITH PLEASURE

The world's most popular hand-held games console is on the verge of getting serious. Rik Haynes grabs the first look at InfoGenius software for the Nintendo Gameboy.

The filofax is dead, long live the Gameboy! A small American company is threatening to smash through the barrier between portable video games and productivity software. GameTek is releasing the first informational software series designed specifically for Nintendo's Gameboy system. The five premier InfoGenius cartridges are based on licensing agreements with 'top-of-the-line' reference sources including Berlitz language translators and the makers of *Roget's Thesaurus*.

Situated in Florida's exotic Miami Beach, GameTek previously concentrated on non-violent, family-oriented games for IBM PC-compatible computers and the Nintendo Entertainment System. "*Super Mario Bros* is a tough act to follow," GameTek confides, "that's why we've come up with names to be reckoned with."

A tough act indeed, but a dawning market full of potential. There are now over five million Gameboy users in Japan, America and Europe since the system was launched 18 months ago. According to Nintendo of America, Gameboy hardware and software sales will top $1 billion during 1991. Nintendo's *Super Mario Bros* is the most successful video game in history. Over 32 million copies have been sold, there is even going to be a Mario movie starring Danny DeVito.

GAME BOY
InfoGenius
PERSONAL ORGANIZER
FRENCH ENGLISH TRANSLATOR
SPELL CHECKER
TRAVEL GUIDE

"InfoGenius is a revolutionary series of personal productivity paks designed to tap the powerful microprocessing capabilities of Nintendo's popular hand-held units and offer an entirely new set of fun uses for the Gameboy," claims GameTek.

There appears to be something for everybody in the InfoGenius range. Probably the most popular 'paks' will be the Spanish and French Language Translators. Berlitz, the world famous language expert, provided the data for over 12,500 words and 300 phrases in each cartridge. An on-screen keyboard is used to spell and translate over 12,500 words in either English, French or Spanish. Additionally, 300 phrases are in specific travel categories such as restaurants, hotels and shopping. A metric and currency convertor is also included.

InfoGenius' Spell Checker and Calculator uses the *American Heritage Dictionary* from Houghton Mifflin, publisher of textbooks, fiction and non-fiction, and reference materials such as *Roget's Thesaurus*. You enter a word via an on-screen keyboard to check over 70,000 of the most commonly misspelled words. The correct spelling and a list of words related by alphabetical or phonetic origin is then displayed. A calculator allows you to perform simple mathematical functions.

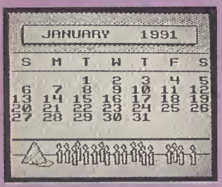
The InfoGenius Travel Guide is a little more adventurous. Frommer, a 33-year-old leader in the publishing of American and international travel books, has contributed information on the 20 most-travelled US cities. Read about hotels, restaurants, nightlife, arts, sports, sights and attractions and use the built-in auto dialler to call for your reservation. It also includes information and emergency phone numbers and a list of toll-free 800 numbers. Descriptions and helpful hints are provided for each city. All data is accessed by either price or location or both. The automatic phone dialler can be used to call any number in the database locally or long-distance.

Last and by every means least, you may keep track of appointments and jot down notes with the *InfoGenius Personal Organiser*. It consists of an address and telephone book with room for over 200 entries, notepad, calculator, world time clock, list of American toll-free 800 numbers and an auto dialler. However, most people agree that pen and paper is still the most convenient method to keep track of appointments and addresses.

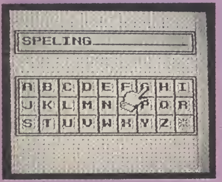
The major disadvantage with InfoGenius software is the Gameboy's lack of a keyboard. Information has to be input via an on-screen keyboard or by scrolling through lists. This can prove very awkward and time-consuming. It's certainly not as impressive as the Sharp or Psion personal electro organisers, but you can't play *Super Mario Land, Tetris, Teenage Mutant Ninja Turtles* or *Pacman* on these upmarket gizmos. All work and no play makes that trip seem ten hours longer.

"We believe that InfoGenius will propel the Gameboy into a new era of popularity with existing users as well as an entirely new audience," says Irv Schwartz, President of GameTek. The five InfoGenius titles each cost $39.99 in the States, and they're only the beginning. GameTek is developing other InfoGenius products including Japanese, German and Italian language translators, European travel guides, encyclopaedias, health and fitness companions and more obvious mind games.

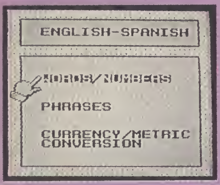
The Walkman ethic of portability, performance and price now heavily influences both the electronics manufacturer and consumer. Punters want to work and play in the plane, train and traffic jam. With more software like InfoGenius, the humble hand-held console could become the principle platform for portable pleasure and business in the future. The 7:54 to Waterloo will never seem the same again. ■



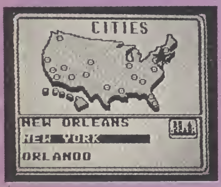
• Move a hand icon across the calendar then set the desired day of appointment in the InfoGenius Personal Organiser.



• With the InfoGenius Spell Checker, you can choose to display the dictionary database (and scroll through the list of words) or enter the word via this on-screen keyboard. The software also includes a simple calculator.



• After the initial InfoGenius French and Spanish Language Translators, GameTek will release Japanese, German and Italian cartridges.



• The InfoGenius Travel Guide contains hundreds of entries for each city – classified by category, price, location and other variables. When you've selected a restaurant, hotel, sight or attraction and called up the relevant information on the screen, you may use the auto dialler to call and make a reservation.

GAMEBOY POWER

Designed and developed by Nintendo's engineers in Japan, the Gameboy hand-held console consists of a small monochrome liquid crystal display (20x18 character grid with four shades of grey), cartridge slot, eight-directional joypad, two fire buttons, two function keys, loud speaker, serial port and connector lead to link-up to another Gameboy so you can play head-to-head games with a friend, 'Walkman' headphone socket, brightness and volume controls.

It has a 1MHz CPU with a similar architecture to the Z80 chip used by the Spectrum and Amstrad CPC micros, 16K RAM, 32 hardware sprites and four stereo sound channels. Gameboy is powered by four 'AA' sized batteries.

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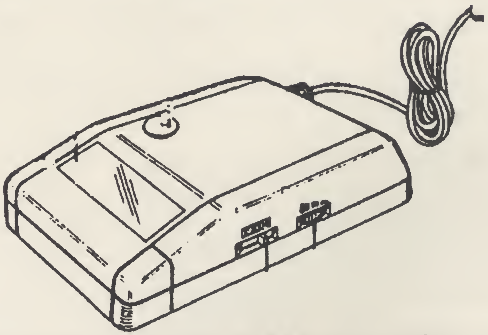

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CONTENTS

MACINTOSH........................16
CPC....................................17
AMIGA...............................18
ARCHIMEDES......................20
PC......................................21
C64....................................22
SPECTRUM........................23
ST......................................26
WHOLE WIRED WORLD........32
CENTREFOLD......................35
CIRCUIT CITY......................36
EXPRESS ON-LINE..............44
TECH TIPS..........................46
PROGRAMMING...................51
THE PD COLUMN.................54

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■ Inventive fellow

With reference to the letter from Michael Hoey (*Express* 117) about better joystick controllers, there is a product already available which outclasses everything else on the market.

Not only can it be used as a standard joystick on all the usual home computer formats, but at a flick of a switch its four fire buttons become independent from each other, with autofire retained on the trigger button. As well as offering eight-directional control, it also has rotate right and left functions. All this is achieved by using two ports for one joystick. It's called the Cheetah 125 Special.

Several thousand have already been sold, but software houses have been slow in taking up this new standard – which is hard to understand when you see a major supplier behind the product, a product that offers infinitely better gameplay. (Hands up everyone fed up with the same old gameplay from one game to the next!). The programming is even very easy – just double up the joystick routine instead of multiplexing everything.

Take, for example, a vertically-scrolling shoot em up. Your plane could accelerate, decelerate, climb, dive, roll left and right and fire four independent weapons from one controller without any multiplexing. Now that is control!

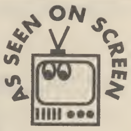
Incidentally, as a game player, I designed this new joystick because I saw a desperate need for it.

Kevin Whitefield, Rochester, Kent

I was beginning to wonder whether you had an interest in promoting this joystick, Kevin and then all became clear! Well done to you – let's just hope it sells well enough for the software houses to find it worth their while to provide the routines your controller needs. I'm all for making games even more fun to play.

H F-W

■ TV sillies



On the telly the other night I saw a horrid advert for Findus frozen peas. The person that starred in it was a complete idiot (*surely you mean the central character was a complete idiot – H F-W*). Not only did he pin empty packets of Findus produce on his bedroom wall, he had a Commodore 64 lying on his desk with no leads hanging out of the back.

Also, how come the streetwise kids in adverts always have Amstrad CPCs or other such old computers? Are we going to see adverts with a really cool guy sitting at a desk looking at his teenage bank card and an Oric in the background? Or maybe a Dragon 32?

Another thing. Why does Paul in *Neighbours* always shout at the secretary because she has put the wrong file in the filing cabinet? Surely he could use the brand new Amiga that was brought into the office to put all his files on a database. Or manage his accounts on a spreadsheet. Or instead of getting the secretary to type his letters on a really old typewriter, he could get her to use a wordprocessor. It would beat playing *Frogger* on it.

Andrew Cooper, Kildary, Ross-Shire

Clearly Paul didn't get a chance to read our Amiga Essentials column before he went out shopping. (Or the *Neighbours* scriptwriters didn't, to come back to the real world for a moment.)

Interesting bit of spotting there – so have this week's TV Fiver.

H F-W

■ CDTV Gripe

As an Amiga owner, I have read with great interest your reports on Commodore's sexy CD-ROM computer, the CDTV. It would definitely be a great development to be able to have a 700Mb disk on what is essentially an A500 – but I would like to disagree with some of your reports on its release date. You tell of it being available in mid '91, but I have a page from a Kays catalogue that shows that the CDTV is clearly being offered to the general public, even if at inflated prices. What's going on?

Simon Richards, Twickenham

Confusion was abounding inside *Express* so far as the CDTV is concerned – or so it seemed to Commodore a week or two ago. So they invited us up to see their National Sales Manager to find out exactly what the score was – look out for full details on CDTV and Commodore's plans for it in the Amiga supplement that comes with next week's issue of *Express.*

After that short commercial break, I can tell you that poor old Commodore fell victim to the incredibly long lead times that the Kays catalogue has – the pages are prepared months and months before the catalogue is published. As to the 'inflated' price of £799, you have to remember that mail order companies let you pay for goods over a long period of time – up to two years in the case of the CDTV. So they 'bosh on some extra dosh' as my Essex friends would say, to cover the interest charges on the money you are effectively borrowing from them.

H F-W

■ Foreign atrocities

Going back to Paul Cuipek's letter in *Express* 116, and the one before that which started the debate, I'd like to point out that I have been coding demos for almost 8 years and throughout that time have never seen any harm or damage arise from any demo that I or any other coder has written.

I do agree, however, that the language used in demos could be slightly more civil and less offensive – but most of the demos which contain such atrocities are of foreign origin. The offensive parts are usually stuck somewhere in the middle of a 450K totally illegible, double-twisted sim-scrolly-with-chocolate-flake that would bore the average person senseless.

Paul's opinions are perhaps slightly confused. Demos are written for one main reason – fun. They are meant to be viewed by all and sundry – what else will boost a coder's ego apart from a demo being displayed to a load of awe-stricken members of the public?

The main reason why demos have got a bad name in some people's eyes is because in the days of 8-bit and the early stone age of 16-bit computers, demo screens had only one purpose. That was to sit on the front of pirated software and portray the name of the group who had decided to hack a piece of software and make it available to everyone. Consequently, every time they see a demo screen, most people tend to associate it with piracy and hacking.

This is not always the case nowadays. There are many groups throughout the world that do not encourage piracy at all. People like us, the Dynamic Duo, and people like The Lost Boys, The Care Bears and so on. What we do is probably one of the best forms of computer art I know of. And how else would people ever know how far their computer could be pushed without the never-ending enthusiasm of experimenting coders?

Demos are free (well, cost a little bit from PD libraries) and are there to be enjoyed by all. They don't need to be put down by someone – especially if those opinions have probably arisen through jealousy.

'Shadow' of the Dynamic Duo

How about sending in some of your work, then 'Shadow'? Maybe our illustrious editor would consider giving the world of demo coding a different kind of exposure... That goes for any other demo coders out there. If you send me your work, I might even get a page or two out of the Big A for a one-off art gallery type feature.

H F-W

■ Art critic

The letter from Paul Cuipek in *Express* 116 raises an interesting point, but asks the wrong question. Never mind what Rubens or any other dead artist would have thought about the current crop of computer demos – why not ask a living artist like David Hockney and get a real answer? (Have you any idea how much David would charge? – H F-W)

The computer demo is not a work of art, nor is it intended as one. (Art usually intends a more profound message than 'Hi to Flasher of Gyruss.') However, it has the potential to become a work of art – and that is what I find fascinating. Using the computer as a medium, it should be possible to unite poetry, music and the graphic arts in a way never before attempted. The problem is how to do it – not from the computing point of view, but from the artistic point of view.

To integrate computer graphics, music and words into one satisfactory, artistic whole, with no real precedent to work from is a task requiring remarkable imagination and breadth of vision. I suspect anyone with that degree of talent is likely to be devoting time and energy to making a name for his or herself in a more accepted medium.

Roger Musson, Edinburgh

I reckon what you are talking about here is MultiMedia, Roger – as pioneered by Apple for the Mac (and to some extent, by Intel for the PC in the form of the DVI project). There's some pretty neat stuff happening at Coventry Poly on the MultiMedia front – and an associated company called Art Of Memory is producing some good work. If you are really interested, ask Coventry Poly for more details of the postgraduate course Graham Howard runs for fine artists who want to use the computer creatively.

H F-W

■ Role reversal?

I was astounded to read the role claimed for INDUG in respect of the SAM Coupé by Mr Brenchley in *Express* 118. He is in no position to talk of misleading readers!

An advertisement for INDUG's magazine, FORMAT, arrived with my SAM Coupé in December 1989. This advertisement stated that the magazine "...now covers the SAM Coupé..." and could be relied on "...to show you how to make the most of your computer'; additionally, a 12-month subscription would include a SAM Coupé software tape.

In fact, I have only received 11 of the 12 issues I was promised, and so far, no tape has arrived. As you pointed out, INDUG is not SAM specific, as is very obvious indeed from the contents of the journal.

Based on my experiences with INDUG I can well understand Mr Brenchley's apprehension at the prospect of competition. However, I am confident that SAM owners will support user groups on the basis of performance – rather than on the basis of organisers' claims.

J Phillips, Blandford, Dorset

■ Warm recommendation

I purchased an Olivetti PC1 computer from Evesham Micros as a result of your recommendation in *Express* 4. Availability of the computer ceased a couple of years ago, and advice and guidance with problems particular to this machine is now almost impossible to obtain.

But I was lucky enough to see a contact address for the Olivetti User Group in a magazine, wrote for details and became a member. Under the guidance of Mark Blackall it has become a most useful mine of information regarding the availability and suitability of hardware add-ons and the modifications needed to allow hard disks, colour monitors, external disk drives and so on to work with the machine. In addition to all this, they run a bulletin board and you can get phone help from Mark. All for £16 including a bi-monthly 'Oligram' disk, packed with software.

I'd be grateful if you could bring this group to the attention of your readers – they also cover the current range of Olivetti machines. Contact the Olivetti PC1 User Group at 68 Queen Elizabeth Drive, Narranton, West Yorkshire WF6 1JF.

Rodney Hayes, Gillingham, Kent

User groups stand or fall on the basis of the support and help they give to their members – who are ultimately customers for their service.

Clearly, some are much better than others – and it's often the motivation of the people who start them that counts in the final analysis.

Anyone else like to nominate user group they belong to as 'Best User Group' – who knows, I might even managed to get a little award and hold a proper ceremony if the response it good.

H F-W

■ Computer Gran!

I would like to start the female ball rolling in the 'I'm the oldest computer freak' contest by telling you of my dear old mother, who at the ripe age of 69 has her own Atari STFM with a Philips monitor and a Panasonic printer.

Her favourite games are *Arkanoid* and *Scrabble*, and she also uses First Word + for letter writing. She has been into computers for the past 6 years and started out with a Spectrum. Her name is Margaret and she lives in Eastbourne.

Robin Fisher, Mitcham, Surrey

I'm not sure she'll thank you for it Robin, but it's a big hello from Hadyn to Margaret Fisher of Eastbourne! Any other female readers out there care to try and tip Margaret off the pinnacle of 'Oldest female Express reader', or are you all too shy about your ages?

H F-W

■ Real life experiences part one: ending toilet rolls down the wire

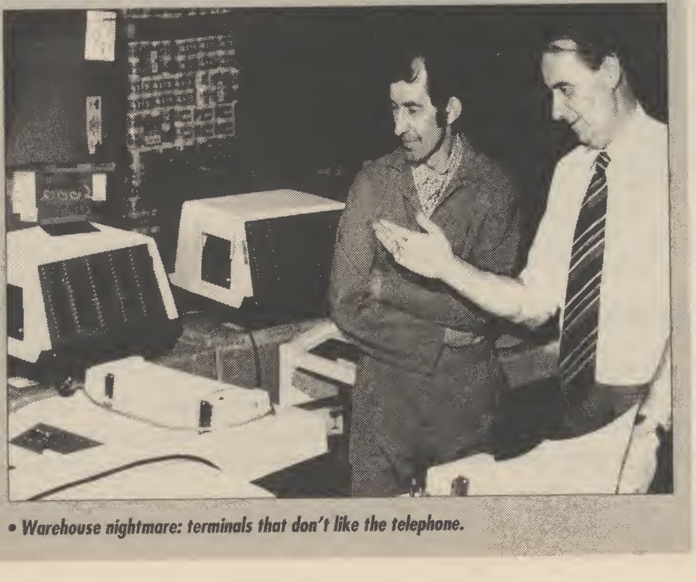
This photo of me was taken in 1972. We were a nationwide supplier of household products, and these terminals are for an on-line system for a national hook-up – which in those days was a way-out innovation. And like many new items, the system turned out to be a white elephant. In this case, partly because the phone lines were old and not up to the grade required by this new technology.

The typical print-out we used to get would be something like 'CODE 654$$%%0... Toile((Roll...deliver to *&*&(65 urgent' which should have read CODE 6548803... Toilet Rolls...deliver to Outlet 44 Urgent

Jim MacDonald, Slough, Berks

A real 'Blast From The Past', eh Jim?

H F-W



• *Warehouse nightmare: terminals that don't like the telephone.*

MAIL SHORTS

■ Those crazy chips...

As Mr Gilbert Hyatt is now the official inventor of the microchip (*Express* 116), does this mean that McCains will have to change the name of their product to 'Hyatts Microchips'?

I must add that the cheese and onion flavour variety is quite disgusting, and I hope that this was not one of the obviously talented Mr Hyatt's ideas. Gilbert certainly displays great foresight in having invented the microchip long before microwaves were on the scene.

Dave Winder, Sutton, Surrey

Er, yes Dave. Quite.

H F-W

■ A pad short?

Why, when buying an NES, Super Famicom or Master System are two control pads provided, but only one in the box with the MegaDrive?

If I win one of your famous fivers, I will be putting it towards a second control pad or a joystick for my MegaDrive.

Charles Reece, Burgess Hill

Beats me Charles. Perhaps MegaDrive owners tend to be more anti-social that other console owners and haven't got many friends to play with? No fiver, either. Sorry.

H F-W

■ Man of the cloth

I am a retired Catholic priest, and my 75th birthday was on 15th January. I look forward to seeing letters in your pages from many more people of my age, or perhaps even older, who enjoy their computing as much as I do.

Having started with a Video Genie I now have two Atari STFMs, one of which I use for programming and word processing, while the other is linked to my keyboard set-up and is devoted to making and recording music.

J N Pearson, Blackburn

I thought you couldn't retire from the Catholic church!

Joking aside, it's good to hear so many older people are having fun with the technology.

H F-W

■ Bad taste

Is it true that the Cruise missile uses Autoroute to navigate to its target? If so, I wonder how much the multi-user licence cost the makers...

Dr Gordon, Canvey Island, Essex

Ha Ha. And the SCUD missile uses the map of the world from the back of a pocket diary, I suppose?

H F-W

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Macintosh

SPOT THE MAC

The letters pages of *Express* at the moment are full of people claiming to have spotted their particular model of computer on the TV. But ever since they first appeared in the early 1980s, Macintoshes have appeared in films and TV programmes – mainly on the desks of senior management. It is almost as film makers use the Mac to suggest an attitude of: "Look at me! I'm important enough to have a Macintosh on my desk, not a PC like the rest of my lowly staff."

And this phenomenon seems to be growing – especially, as one would expect, in films and programs from the States. These days, it seems that producers have decided that no-one who is important would be seen dead using an IBM PC. (So they're not totally wrong, then...)

For total Mac overload, check out *Beverly Hills 90120*, transmitted on ITV on Saturday afternoons. Set in an exclusive Californian suburb, even the school kids carry Mac Portables to classes. Over here, most of us couldn't even afford programmable calculators at school! But it's in the office of the school magazine (yup, it has its own office) that the Macs really abound. Every desk has one – the lowliest seems to be the editor's SE/30. It makes you sick.

Films, too, have their fair share of Steve Jobs' little baby. *Star Trek IV* (you know, the one where they save the whales and everyone lives happily ever after) features an hilarious scene where Scotty thinks that the mouse is a microphone for voice input into the machine. Laugh, we nearly did. Anyway, following this little episode the Mac's screen is shown displaying all sorts of fab graphics. And it was only an SE! I wish my IIcx looked as impressive!

If you caught *The South Bank Show* about the filming of *The Bonfire of the Vanities* a couple of weeks ago, you'll have seen some little storyboard sketches that director Brian DePalma produced on a computer. And yes, the computer is, in fact, a Mac. He uses a program called *Storyboarder* (what else), which I'll tell you more about when the company which makes it can be persuaded to hand over a review copy.

Finally on the film front, *Back to the Future II* has a Mac in the window of an antique shop in 2010. So there you go – don't buy a Macintosh, it'll be obsolete within 20 years.

If you see any other instances of Macs appearing on film, drop H F-W a line – let's be honest, a Mac in a Spielburg film is somewhat more impressive that an Amiga on *Neighbours*!

PROGRAMMING

For many people, the beauty of the Macintosh is that it doesn't require you to think like a programmer in order to use the machine. But for the wireheads and technofreaks out there who've bought Macintoshes, the opposite is precisely the case. They've bought Macs because writing programs based on the Mac user interface means that they'll end up with a very professional-looking product. But where oh where to start...

Well, help is at hand. Writing a Macintosh application using Pascal or even (heaven forbid) C can be hell. So what better way to gently introduce yourself to developing Mac programs than by writing them in BASIC.

No, don't switch off if you hate the language. I do too, but the version I have in mind – Microsoft's *QuickBASIC* – is somewhat more sophisticated than many earlier incarnations of this much-

POSTCARD FROM AMERICA

The front line of marketing trench warfare was dug deep into the carpet of the Macworld Expo. It was authentic dirty tricks time – real Mac-inations!

Quark, the developer of *XPress*, a high-end desktop publishing program, produced a slick grey and yellow brochure. It compared the features of *XPress 3.0* to competitors, Aldus *PageMaker*, and Ventura *Publisher*.

The *PageMaker* representatives "borrowed" a copy of the handout the evening before the show opened. Working into the night, they created a sheet in the identical style, titled *Errors and Omissions 3.0*. It chronicled a long list of supposedly missing features of *XPress*, including 27 lengthy notes in microscopic sized text. It wasn't enough of a good joke to distribute it in the Aldus booth, so they stuffed the gag sheet into the originals stacked at the Quark booth. The old insert-and-run attack.

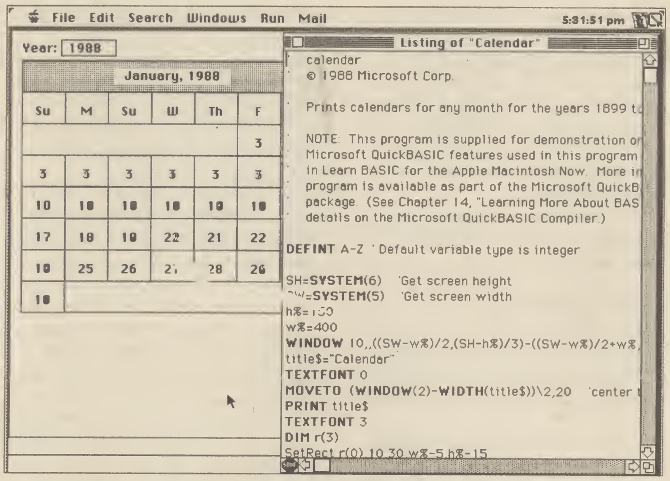
Through clenched teeth and fiXed smile, the Quark managers eXPressed their dismay, "it was slightly underhanded." Just wait until the neXt eXPo, *PageMaker*!

The Jasmine/iDs booth featured a live chimp. Attendees had their pictures taken with ape on one arm, and a hard disk on the other. Jasmine was one of the major hard drive players in the Mac market from 1986 to 1989. Its Expo parties were phenomenal affairs, with endless quantities of food, booze, rock 'n roll, and T-shirts. After a couple of marginal products and managerial infighting, the company went into Chapter 11 bankruptcy.

Chess SA, a French holding company, bought Jasmine last year. It claims that it will reimburse the thousands of creditors – most of them users that bought lousy drives as the firm went under – over the next five years. It's also selling a line of small hard drives powered from the external floppy port.

A former employee tried to persuade me that the chimp's name was Dennis— Dennis Chang is the ex-president of Jasmine. When I didn't bite on the name-game, the hired hand threatened to call the Society for the Prevention of Cruelty to Animals for violating chimp labour laws. Ape-solutely wild!

David Morgenstern



```
' calendar
' © 1988 Microsoft Corp.

' Prints calendars for any month for the years 1899 t

' NOTE: This program is supplied for demonstration o
' Microsoft QuickBASIC features used in this program
' in Learn BASIC for the Apple Macintosh Now. More i
' program is available as part of the Microsoft QuickB
' package. (See Chapter 14, "Learning More About BAS
' details on the Microsoft QuickBASIC Compiler.)

DEFINT A-Z  ' Default variable type is integer

SH=SYSTEM(6)   'Get screen height
SW=SYSTEM(5)   'Get screen width
h%=150
w%=400
WINDOW 10,,((SW-w%)/2,(SH-h%)/3)-((SW-w%)/2+w%,
title$="Calendar"
TEXTFONT 0
MOVETO (WINDOW(2)-WIDTH(title$))\2,20   'center t
PRINT title$
TEXTFONT 3
DIM r(3)
SetRect r(0),10,30,w%-5,h%-15
```

• *QuickBASIC is a more sophisticated language than you might think.*

abused language. To make things even easier, the company has produced a book – *Learn BASIC for the Apple Macintosh Now* – to help you along the way. It also contains a copy of the *QuickBASIC Interpreter* on disk, so you can begin programming on your Mac immediately.

The book (well, more of a manual actually) takes things step-by-step, and introduces Macintosh concepts like graphics, menus, dialog boxes and so on in easy stages. While it would probably be hard going for a total beginner, those who, like me, graduated to 'real' languages a few years ago will find it a useful refresher as well as an introduction to how *QuickBASIC* works on the Mac. Although *QuickBASIC* handles things like menus and buttons in a slightly different manner to that with which most Mac programmers are familiar, it's a good start for anyone who wants to learn to program the Macintosh.

Learn BASIC for the Apple Macintosh Now is written by Michael Halvorson and David Rygmyr and is published by Microsoft Press. Its ISBN is 1 55615 3147 and the cost (including the *QuickBASIC Interpreter*) is £36.95.

In a week or two I'll be looking at the *QuickBASIC* compiler – the follow-up program to the *Interpreter* – and at the other options available for budding programmers.

Ian Wrigley

PC

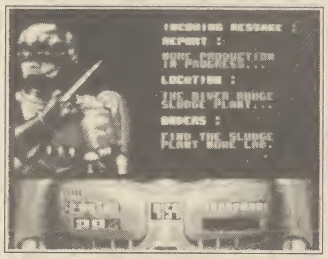
ROBOCOP 2

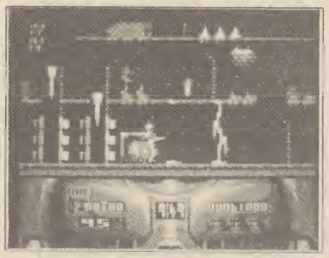
At long, long last I've been able to get hold of a copy of *Robocop 2* on the console. I'd seen it running in demo form in high street shops before, but never had the chance to play it for longer than about half a minute. My impressions then were of a rather fiddly arcade game that didn't show any obvious signs of being programmed for the console's dramatically improved hardware.

I was wrong. The main sprite is still not hugely impressive, especially in terms of animation, but the backgrounds and various objects are really well achieved. The programmers have used the hardware sprites cleverly to provide some beautifully-detailed background details and hazards which are blended in so well that you don't immediately realise what's been done – you're just aware that the background graphics are very, very good indeed.

The game itself is quite different to the original *Robocop*. Instead of a simple scrolling shoot-'em-up you've got a rather complex platform game which demands split-second timing with millimetre-perfect judgement and incredible patience! But this is also the game's only drawback; *Robocop 2* is incredibly frustrating. There are some extremely vicious puzzles and every time you go wrong you're sent right back to the start again. (You get round this by visiting the various 'rooms' found on the first level. This gives you a later restart point.)

There are seven levels in all. Three of them are full platform levels, while the other four consist of two *Op Wolf*-style shooting gallery blasts and two maze-style puzzle sections.


• *There's your mission – find the sludge plant nuke lab!*


• *Robocop 2 is more of a platform puzzler than a shoot-'em-up.*

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Robocop 2 is possibly the best console game yet. Its only real flaw is that it's very, very hard, and this is going to put a lot of people off. Unlike many games it doesn't have an easy introductory level to ease you in. However, it is this very difficulty and frustration which makes the game so utterly compulsive.

It's a big, big game and the gameplay is excellent. But will it drive you mad?

WERE WE SCOOPED?

I can't resist it. A major games title from another publishing house (no names mentioned!) has just reviewed Empire's *Spiderman* for the Amstrad. We've been scooped! Well, that was my first reaction, anyway. A quick phone call soon scotched that notion, though, since it appears the game isn't even finished yet!

So what's the point of 'reviewing' a preview version of a game? After all, you can't give it a good slagging because the next thing you know you're presented with a finished version that's a million times better and a writ! The only alternative is to describe every game in suitably glowing terms – which is great for the advertisers but useless for the readers.

Which is why, folks, a magazine must never 'review' preview versions of games. Here endeth today's sermon.

JOYSTICK NEWS

I've just been tinkering with a strange new joystick from newcomer Kracking. Called the Converta, it has a base which can either be held in one hand or opened out and stuck to a tabletop with suckers.

It's quite a neat idea, but the design is yet to be finalised as the company is considering some of the criticisms made so far. For a start, the folding 'leaves' don't latch into place when you fold them up for hand-held use. However, the stick is a good size for small hands and pretty well put together. Look out for it in the shops when Kracking finally goes into full production.

And on the strange joystick front, there's a new offering just out from Cheetah which sounds, well... dumb.

Called the Aeroskate, it will apparently attach to your skateboard, allowing you to play skateboarding, skiing, surfing games etc! (I can't wait to see a picture.)

SERIOUSLY IMPRACTICAL?

John Hudson from Huddersfield has some interesting opinions about the notion of providing serious software on the new cartridge format:

"I think there are good practical reasons for not using cartridges for serious software. Firstly, most of the present 'serious' ROMs – *Protext*, *Maxam*, *Utopia* – are intended to be used side-by-side and would need to be all on a 'serious' cartridge to avoid having to swap cartridges between applications. If one had to do this, one would be better off with a ROMbox.

"Secondly, unless the code can be further compressed, neither *Mini Office* nor Newword's spelling checker – not large by PC standards – would fit on a cartridge. CP/M and its main utilities would be an attractive option but probably more expensive than the present ROMing service from Graduate Software.

"However, one viable use for a 'serious' cartridge might be CP/M Plus, a hard disk controller and software to distinguish whether a 720K disk in drive B: was a CP/M or MS-DOS disk and read/write to it accordingly. One could then swap between a games playing 6128 Plus with 'no' hard disk and a business 6128 Plus with fully-functioning hard disk by plugging in one cartridge."

Well I'm not sure I agree about *Protext* and *Maxam* etc. *Protext* is a fine word processor on its own. But John's idea about putting CP/M on cartridge is a great one – after all, it's already been done before with the Amstrad PCW, a machine which is supplied as standard with *LocoScript* word processing software and CP/M Plus on disk, plus several handy utilities.

But with Amstrad now actively pushing the Amstrads as games-only machines, will it ever happen? No, I rather think it won't.

WRITE NOW!

There's just time to say if you've got anything to say about Amstrads, computing or life in general (within reason), just drop me a line!

Write to: Rod Lawton, CPC Column, *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Rod Lawton

Amiga

SPECTRA SPECTRE

Anyone who reads the American Amiga press will have undoubtedly seen the advertisements for Oxxi/Aegis' forthcoming HAM paint system, *Spectracolour*. Indeed, even a number of UK magazines have started talking about it.

Not surprisingly, Oxxi/Aegis thinks it's the best thing since sliced bread, but rumour has it that it may well never see the light of day. Why? Well, if you have examined the screen shots within the advertisement carefully, you may well have noticed similarities between *Spectracolour* and another very well known HAM paint system, namely Microlllusions' *Photon Paint 2*.

Now *Photon Paint 2* isn't actually written by Microlllusions' own inhouse programming staff (that is, if there are any left!). Instead, Microlllusions actually bought the product from an Israeli programming team called BazboSoft (great name, eh!). Microlllusions was under the impression that BazboSoft was hard at work on *Photon Paint 3*, but it seems that our Israeli friends have been doing a spot of moonlighting for Oxxi/Aegis.

The upshot of this is, as you can probably guess, legal action.

Microlllusions is understandably miffed about the whole affair, which isn't entirely surprising when the two products look so similar. Indeed, the

• **Photon** *bears more than a passing resemblance to* **SpectraColour.**

user interface of *SpectraColour* looks virtually identical to that of *Photon Paint*. MicroIllusions is currently in the process of taking legal action against BazboSoft and it seems almost certain that Oxxi/Aegis' product won't see the light of day unless substantial changes are made to it.

This raises the point of whether a third party development house should be allowed to develop a similar product for two different companies using the same code. The problem isn't just restricted to applications programmers – games programmers have fallen foul to this kind of thing many times in the past (anyone remember the 'Continental Circus' affair?).

As a programmer myself, I personally believe that the code itself belongs to the development house in question. It's common practise for programmers to build up huge libraries of routines which will be used over and over again within different projects. If they had to rewrite these routines every time, development would take substantially longer.

But where user interfaces are concerned (or even 'ways of working'), this is a totally different matter all together. It's common knowledge that a product lives or dies on the quality of its user interface – it doesn't matter how powerful the product is, if it's difficult to use, then no one will want to use it. As a result, we naturally distinguish between products by their user interfaces; after all, such things as paint packages are so similar that the user interface is the only thing that sets them apart.

It's inevitable that some similarities will occur, but to copy a user interface 'as is' is simply unforgivable. Anyone else care to comment on this?

ULTIMATE DRIVE

Thanks to a friend's recent visit to the good old US of A, I've just got my hands on Applied Engineering's new AEHD High Density drive for the Amiga. Here's what it has to offer:

High Capacity. With the AEHD you can store up to 1.52 Mb of data on a standard high density floppy disk (these can be bought for about 75p each).

Applied Engineering supplies a diskette containing a device driver which allows any Amiga application to read and write data to and from high density floppies. A single line added to your startup-sequence is all that is necessary to get the drive working.

One very nice feature is that the drive can access both standard and high density floppies simultaneously. This is achieved simply by referring to the drive by a different unit number (high density disks are always DF6: or higher).

Electronic disk ejection. The AEHD boasts Mac-like electronic disk ejection (EDE) which allows you to eject a disk through software. A utility is included which allows you to do just this using predefined 'hot keys'.

Another advantage of EDE is that the drive will only eject the disk once all disk accesses are complete, therefore protecting your disks from damage caused by accidentally ejecting a disk while the machine is reading or writing data to it.

Compatibility. Applied Engineering claims that its drive is fully compatible with Commodore's soon to be released high density drive for the A3000. Commodore will be building support for high density drives into a future release of *Kickstart*, which will allow the Amiga to drive the AEHD directly without the need for AE's supplied driver software.

MEMORY MATTERS

I like to think that I own a pretty well endowed Amiga. It's got 9Mb of RAM, a Quantum SCSI hard drive, a genlock and even *Workbench 2.0* installed. I haven't yet managed to lay my hands on a decent processor accelerator (that's going to be my next acquisition), but then you can't always have everything you want!

But even with this fairly power-packed Amiga, there comes a time when you reach the limits of that power. We all know hard drives are fairly easy to fill (indeed, 50 per cent of a hard drive is usually filled within the first day or so), but the limit that you usually encounter first is that of memory. You may think 9Mb is difficult to fill, but you'd be surprised.

Most applications won't usually use up all that RAM themselves, but multi-task several together and your machine's RAM is swallowed up in no time. Chip RAM is always the first to go, but the old fast RAM count can also drop alarmingly.

The solution would be to fit extra RAM, but as we all know current Amigas can only access a maximum of 9Mb. The A3000 with its 32-bit processor can access substantially more than this (something like 18Mb), but how many of us can actually afford such a luxury item?

Help may soon be at hand, however. According to a source in the States, Great Vally Products (or 'GVP' to their friends) is working on an expansion card for the 2000 which will allow you to access substantially more than 9Mb. How substantial this will be is unknown, but it seems almost certain that the card will allow 2000 users (and possibly even 500 users) to at least match the expansion capabilities of the 3000.

Meanwhile at Commodoreville, rumours have been rife for months of the company's intention to build a virtual RAM facility into a post-2.0 release of *Kickstart*. This will effectively allow the Amiga to use hard drives as RAM (a bit like the Mac), therefore theoretically limiting the amount of workspace only by the size of your hard drive. This is totally transparent to applications, so there's no reason why you should be able to create animations etc that amount to tens of megabytes in size!

Commodore has been secretly talking about a post-2.0 upgrade for a while now and virtual memory is only one of a number of extra facilities it will provide. No details when this upgrade will be released, but – considering we don't even have 2.0 yet – it almost certainly won't be with us for a fair old time yet.

Jason Holborn

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FACING THE PRESS

Action on the magazine front is hotting up. With the old *A&B Computing* emerging from its cocoon and becoming the new 'all 32-bit' *Archimedes World*, and old favourite *Acorn User* re-designing its cover, the shelves in W H Smith look barely recognisable. Both mags are now produced wholly on the Archimedes using Computer Concepts' *Impression* DTP package, which has to be a stamp of approval from the professionals.

There's also a new disk-based 'magazine' called *Syracuse*. This seems to be more of a way of boosting sales of 'public domain' disks by including a disk of written contributions, articles and reviews and so on. But for £6, you receive two disks of PD stuff plus a magazine disk. I haven't seen an issue yet, so it's caveat emptor, but the address is *Syracuse*, Wythenee House, 10 Alastair Crescent, Prenton, Wirral L43 OUR. Telephone 051-608 5469 for further details.

SCAN, MAN

Computer Concepts' ScanLight was once of the first scanners for the Arc. Now there are armies of others. But CC has updated its scanning software in the meantime, and I've been looking at the latest incarnation.

The software is neat and has the usual 3D look. Scanning is simple, and it's easy to select the resolution you want. It works with CC's Scanlight Senior (A4) and ScanLight Junior podules, and with both the 'old' Mitsubishi A4 scanner and the more recent 'pregnant' version (the MH216AF or newer MH216CG). But there doesn't seem to be any way of telling the software what sort you have. So each time you fire it up, you have to select the right scanner from a menu. You can also choose the dot-pattern to use for half-toning grey sprites: the default is best for most images.

Once you've scanned something in, the fun starts. You get an 'original image' window within which you can view the scanned sprite at any size, crop the edges off the sprite, flip it and so on. You can also display an 'altered sprite'. This is based on the original, but a toolbox allows you to rotate it, increase the number of greys in the image at the expense of resolution (re-sampling) and manipulate the 'gamma curve'. This relates the brightness of the original image with the brightness of the altered image and you can bend the curve to enhance the contrast, pick out the edges and so on. Once the modifications produce just the effect you want, you can save the altered image.

This image manipulation toolbox can also be used on monochrome sprites from other sources; you just drag any sprite onto the Scanner application and it becomes the original.

Conclusion: great. At £215 for the handy (A5) size and £460 for the A4 version, ScanLight is a little more expensive than examples from Technomatic, Beebug and the others. But the software is more sophisticated and is probably worth the extra.

'EXTEND'

Well, someone had to do it. Viruses on the Archimedes are rare, but one seems to have been let loose on the unwary world. It progressively eats up your RAM and eventually makes you run out of memory. But you'll more likely notice it when it renames files and produces errors like 'File !Schema.!Sprites not found'.

The pillocks who write such things should consider something a little more creative.

If you're worried, then there's a virus killer in most PD libraries. Try Hung Computer Services on 081-206 2324, or by mail at 82 Roe lane, Kingsbury, London NW9 9BD.

MONITOR MODE MADNESS

Screen modes on the Archimedes are immensely flexible. Because the VIDC chip that's responsible for the video signal timing is programmable you can set up almost any combination of resolution (pixels across and down) and refresh rate (frames per second).

Of course, whether your monitor can display it is another matter. Unless you have a multisync screen, you're limited to something very close to 50 frames per second, with a practical limit of about 800 by 290 pixels. (Normal mode 12 is 640 by 256.)

There are utilities to compile any new mode available from most of the public domain libraries. But once you've done that, your problems start. Any sprite defined in a new mode cannot be displayed or printed on a machine without that same mode module: it shows up as a blank rectangle if you try to load the sprite into Draw or Paint.

If you're sending a sprite to someone else, make sure you send the mode module too. They may not be able to use the new mode with their monitor (if for example they don't have a multisync), but once they double-click on the mode module to install it, they will at least be able to see the sprite in Paint or Draw, and print it out.

Some multisyncs are very flexible allowing you to display almost anything, such as the Eizo 9060. Others, like the vaunted Taxan 795, cannot display a picture as mundane as mode 12 without an Atomwide VIDC Enhancer, and so are useless for playing many games.

The Eizo is probably my current favourite: it's reasonably priced at £460, sharp and clear, all the controls are on the front, and it has a low emission design to cut down any harmful effects of magnetic or electromagnetic leakage (if indeed there are any harmful effects).

The Taxan costs about £75 more but has that beautiful flat Trinitron screen. The necessary VIDC Enhancer is usually provided free.

If you have a 795 but no enhancer, get one. Atomwide is on 0689-838852. But as a temporary fix, put your monitor into VGA mode; there's a switch on the front left. Now type:

```
'*Configure MonitorType 3'
```

and

```
'*Configure WimpMode 27'
```

on the computer, reboot, and all will be well.

This works for lots of PC-type VGA monitors too, which can often be picked up very cheaply at micro mart-type events.

STRANGE BUT TRUE DEPARTMENT
On an Arc 540, there are four new VGA modes and one 16-colour SVGA (800 by 600) mode. And even if you configure your 540 for a VGA monitor as above (MonitorType 3), you can still go into a sort of emulated mode 12 which isn't normally available on a VGA monitor.

Also strange but true. You can't include the space character in a file name. Well, actually, that's not so strange. It does rule out names like 'My diary' or 'To do list'. But you can include character 160 in file names, and 160 is a 'non-breaking space'. So if you hold down ALT and type 160 on the numeric keypad, you can call a file 'To do list'. RISCOS prevents you having to type the filename more that once so once you've called it this, you'll never even have to remember it's ALT-160.

THINGS TO COME
Next week, I'm taking a look at two teletext adaptors for the Arc from Ground Control and (I hope) Morley. I'll be presenting my view of the latest ArcTerm comms software sometime soon. And I'm trying to track down some new fonts too.

Ken Coumarin

PC

SEARCHING REPLACE
File management can become tiresome if you're in the habit of working on more than one PC. You know what happens. You forget which file is the latest version. Well, thoughtful old Microsoft has provided a utility to take all the slog out of the process. There's a utility called REPLACE that does the business for you.

REPLACE works in a variety of different ways to solve all variants of the file replacement problem. Used on it's own like so:

```
REPLACE A: C:\UMBERTO
```

replaces all files in the sub-directory UMBERTO with files on A: that have the same name. If you're in the habit of avoiding duplicate names in different directories you can make it even easier with

```
REPLACE A: C: /S
```

which searches sub-directories for files to replace.

There are other useful switches, for example

```
REPLACE A: C: /S /D
```

only replaces the files if they're newer than the existing file on the target disk so that only the latest version appears on the C:.

REPLACE also deals with the problem of adding files that should be there but aren't, without putting you to the trouble of searching through directory listings or risking overwriting older version of files you may want to keep. This might happen when updating an archive directory. The command:

```
REPLACE C:\NEW C:OLD /A
```

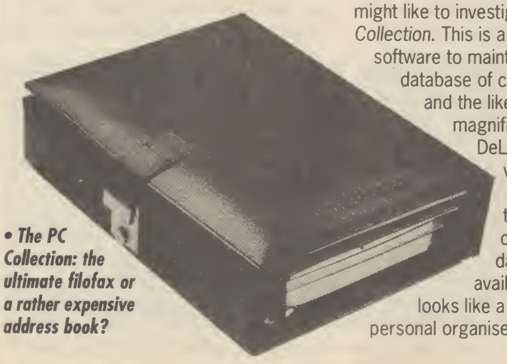
will add files from NEW to OLD only if there is no version of them there already. Surprisingly useful this one.

REPLACE will even update files with Read Only attributes set, though it draws the line at Hidden or System files.

FORBIDDEN FRUIT
Here's an interesting rumour floating in from the States. Sources, who people that ought to know say ought to know, are rumour mongering that Apple is about to license the front end of the Mac to run on Intel-based machines. Now this doesn't mean that PCs will be able to run Macintosh programs. Indeed said rumour mongers are desperately attempting to avoid saying "PC", referring to "Intel platform" a lot in a sort of south Californian squeamishness for all things IBM. You can read that two ways; they want to exclude the possibility that IBM itself is involved, or, more likely, that the version of the Mac operating system to be ported across is, in fact, the Unix-based A/UX system. More when a little bird flies past again.

GULF FACTS
Just in case you had missed all the late night involved discussions of the Gulf, and how it was all our fault for drawing a line in the wrong place on a foreign office chart in the Thirties, Optech in the US is offering a CD-ROM packed with all the facts on Middle Eastern history. Much of the data has been sourced from the CIA so let's hope that they've updated it and Saddam isn't still listed as a "proto-fascist, but he's OK as he's one of ours".

SAFE KEEPING
Some people have to do absolutely everything on computers, because "they're there". If you're like that you might like to investigate The *PC Collection*. This is a combination of software to maintain a personal database of contacts, addresses and the like, and "a magnificent binder in DeLuxe and Major versions". This apparently makes it the most impressive concept in personal data systems available today. In fact it looks like a pretty ordinary personal organiser and some pretty



• The PC Collection: the ultimate filofax or a rather expensive address book?

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the game is, consequently, endlessly playable. This is definitely the yardstick by which other race games will be measured.

VFL UPDATE

Last year I excitedly filed a report about a company called Dacol which released a product called the VFL (video fast loader). VFL was a cartridge and cable combo custom made for the 64 which ostensibly did this: it saved any kind of program resident in your C64's memory to a connected VHS video recorder via a BNC plug.

The advantage of using videotape as a storage medium was that enormous programs could be loaded or saved in seconds and something like up to 1000 games could be stored on a single three hour long tape. Not surprisingly, there was a fair amount of response to this from C64 users, and other magazines ran items on the VFL. *Commodore Format*, the other C64 magazine for which I write, ran a favourable review of VFL. It also ran a competition and secured a special offer from Dacol which meant that, for a limited period, CF readers could get ten pounds off the standard £40-ish pound price tag.

Since then, news from Dacol has not been good. In fact, there hasn't been any. What there have been a fair number of are telephone calls from worried readers who've sent off for their cartridges with various sad results. People have had cartridges that don't work (in one case four that didn't work), others have had their cheques cashed but not received a cartridge.

One of the main problems in finding out if anything has gone wrong with either Dacol or the cartridges (or both, heaven forbid) is that the reclusive Dacol has a habit of leaving its telephone off the hook.

It should have been obvious to everyone responding to the Dacol ads that the company wasn't a multinational corporation with a computerised database on every customer but surely they could expect a better response than this.

I did phone Dacol several times the day before this column went to print, to tell them what I intended to write and what, if anything, they wanted to point out in reply. The phone wasn't off the hook. It simply went unanswered.

If anyone from Dacol is reading this, perhaps they could call me. If anybody else reading this has had any problems with either Dacol or the VFL cartridge itself, I would be very interested in hearing from them.

Sean Masterson

Spectrum

LEARNING WITH SPECCY

Loads of Speccies were sold on the premise they would be used for educational purposes so maybe it's time to abandon your never ending battle against the forces of evil and unplug the joystick for a while.

Storm Software has a large range of learning games for children of various ages and abilities. Its latest release is *Adventure Playground*, a package of educational games for children aged five and above that apparently helps with memory, reading and spelling, strategy and spatial concepts.

I can't vouch for everything but this professional-looking package comprises some well thought out games. There are two explorations, both based on nursery rhymes. The first one, *Crooked Tail*, has four games following the scenes of the rhyme and the second, *The Queen of Hearts*, is a simple adventure-style game with locations like the Yellow Brick road and Aladdin's Cave.

I'm afraid I couldn't rope any children in to test out the educational value of *Adventure Playground* but in both explorations graphics and sound were a bit dated even though the design of the program was fundamentally sound.

Storm has a good back catalogue of educational stuff for Speccy as well. Titles include *Ollie Octopus' Sketchpad*, *Castle of Dreams*, *Coffee* and *Flight Path*. For a free information sheet write to Storm Software, Freepost, Poyntington, Sherbourne, Dorset. No stamp needed.

It's good to see someone producing something other then shoot-the-small-green-blobs type games. If you can recommend any educational packages please write in and tell us.

IMPRESSIVE COMMAND

One release you might want to keep a shelfwards eye open for is Realtime's *Battle Command* – the long-awaited, drool-worthy sequel to the Spectastic *Carrier Command*. This time the action takes place inside a tank with your aim being to complete a series of 10 different missions. As with the original, there is a variety of weapons you can deploy to achieve your aims and the whole thing is depicted in glorious solid 3D monochrome graphics.

Knowing Realtime's previous stuff I trust them to make everything whizz around at a fair old rate. It all looks very hopeful and it'll be refreshing to see an original title rather than the-game-of-the-film-of-the-quiz-show-host for a change.

FANZINE NEWS

There's been quite a bit of movement in the fanzine world recently with a few new titles plus the post Chrimbo editions of various mags. SAM Coupé owners should welcome the sight of a new disk-based mag coming their way soon called *Enceladus*.

It is aimed at the more serious SAM user and contents for issue one sound pretty exciting. They include a Mandelbrot set generator, disk examiner and character designer to name but a few. *Enceladus* can be yours when you send a cheque for £4.99 plus a blank disk to go on, to Graham Burtenshaw, 6 Rawlins Avenue, Weston Super Mare, Avon BS22 0FN.

ordinary *Sidekick*-type software.

If you like to keep organised, and want your PC to help out, give The PC Collection a call on 0628 784001. The standard version will set you back £169.

READING RIGHT

The Caere Corporation, responsible for the excellent Typist hand OCR scanner, has just released a Windows 3 OCR package called *Omnipage Professional*, which, it claims, is the first 32-bit software for Windows 3. If this is the case then Caere has rather jumped the gun on Microsoft, which had been rumoured to be working on a 32-bit version of Windows. In fact, Microsoft helped Ceare develop the program by expanding its development system to cope with 32-bits. All other Windows programs operate with 16 bits.

This software provides a fourth level to Windows: Real mode (8086 processors, or 640K of memory), Standard mode (286 and at least 1Mb), 366 enhanced mode (386SX and 2Mb) and now 32-bit (386 or 486 only). Getting complicated or what?

Omnipage Professional/386 costs £895 and is available from Computers Unlimited on 081-200 8282.

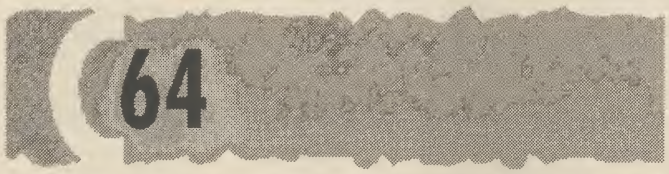
POST IT NOTES

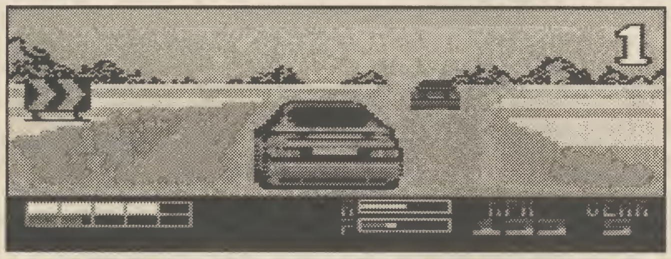
Who can honestly say they've never wondered about import tariffs on light bulbs in Bangladesh. I know I have. So I was overwhelmed with joy to be sent a copy of the Royal Mail's database disk.

But seriously folks, if you're a postroom type who needs to know the second class surface rate to South Africa for caged birds you need look no further. The database is intelligently arranged, with hypertext links taking you to related information. And best of all it's free.

Write to Mark Thomson at Royal Mail International, 52 Grosvenor Gardens, London SW1 0AA and he'll send you one, on either disk format.

Stuart Anderton and Steve Patient





• **Lotus Turbo Esprit Challenge:** ***the yardstick by which other race games will be measured?***

FINALLY PASSED THE POST

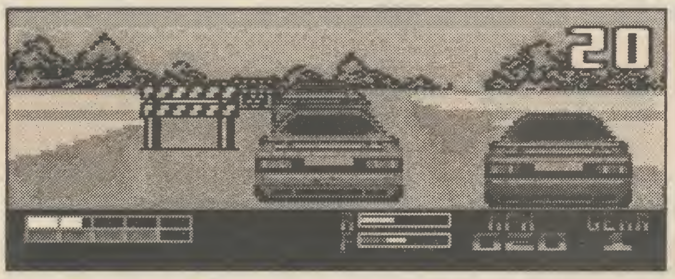
There's not a single lingering jot of doubt that *Lotus Esprit Turbo Challenge* is brilliant, not even a jot called Thomas lurking mortally wounded in a corner having been mugged by hard evidence to the contrary.

It's a one or two player game with action split mid-screen and the players' views set just behind their racing cars (no guesses for make or model). It's phenomenally fast to look at and play and has what people around here think is the best engine noise ever constructed on a 64.

There's a practice mode and three further levels of difficulty for the terminally competitive. Races are set all over the place but the scenery is always the same, in that it does the job. Other competitors' cars are off-the-shelf blue as opposed to your winning shade of go-faster red. The sprites are satisfyingly large without being chunky and there's a fair amount of detail in them too.

The only road signs you need of which you need to take note (apart from life-saving chevrons) are those indicating the pits. Ignore these at competition level and you'll find your vehicle fuel starved. You'll come rumbling to a halt without so much as a hard shoulder to cry on. All the pits seem to do is refuel your Lotus but there are some electrically coloured tech-type drawings to keep your eyes from closing. The presentation screens in general are something like way, way above second rate.

Wot, no gripes? Er. No, not really. Race game programmers have now seemed to make it a tradition to design their games so that, on collision with other vehicles, it's only the one that you drive that slows down but that's a characteristic you soon get used to. The controls are highly responsive and



• ***How come when you collide with other cars you slow down but they don't?***

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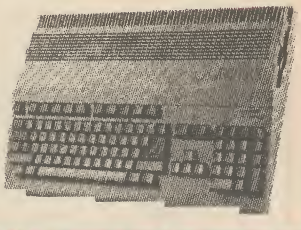

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Needless to say, but I will anyway, contributions are welcome.

The Ed of *Enceladus* also has a few tastey sounding pieces of hardware on offer. Send an SAE for more details on his Load/Save switch, joystick splitter, light pen and headphone amplifier for use with the Coupé.

ITS ZAT OLD FAVOURITE

One faithful old regular I've just received the latest issue of is Speccy/SAM organ *ZAT*. It's as impressive as ever, I'm pleased to confirm, with 30 odd professional looking pages. There seems to be more emphasis on SAM than before with very favourable reviews of Enigma's *Multipack 1*, *The Famous Five* and *Pipeline* as well as techie assessments of *SC Speclone* and *SC Assembler*.

Other features I enjoyed in this issue (number 6) were the visually excellent comic strip and the review of the latest All Formats Fair. *ZAT* offers a good mix of games and techie coverage, looks good and provides a worth while alternative to nationally available publications. It costs 80p and a stamp from PO Box 488, Tweedale, Telford, Shropshire TF7 4SU. They're also still looking for journo types to contribute, particularly Speccy owners. Think of the money, fame and free games and get in touch at the above address.

TURBO POWER

Another trusty organ that's still going strong is *Turbo*, the SAM Coupé fanzine. It has stuck by the SAM since it's birth and continues to support it with a monthly mag and public domain library.

The mag's about 20 (A4) pages thick and the latest issues' highlights include: maps for *Sam Strikes Out* and *Famous Five*, a few interviews, up to date news, article on sexism in software and some vital MIDI tips. The photocopying is often a bit dodgy and layout leaves several lots to be desired but the enthusiasm and commitment shines through.

Turbo's public domain library is also looking very impressive with 11 disk loads of SAM PD including a version of *Tetris*, disk utilities and lots of screens.

A sample issue of *Turbo* costs a mere £1 or you can whack off an SAE for more details to *Turbo*, 8 Healey, Tamworth, Staffs B77 2RP.

GET YOUR NAME IN PRINT

If you edit a fanzine, run a user group or tell people to be quiet in a public domain library let me know by writing to the usual address with all the appropriate details. Or have you got any hints, tips, pokes or cheats for the Speccy or SAM that you'd like to share with us? I'm always keen to receive anything, whether concerning games or any other type of program.

Send anything and everything to Robin Alway, The Spectrum Column, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

Robin Alway

ST

STE WORLD-BEATER

The STFM will be phased out and the STE will take its place. The change was always inevitable, but now it really looks like it's going to happen. With the promotion of the STE comes a £100 price cut, down to a competition bruising £299.

The price point of the Atari best seller is crucial. At £299 it beats all competition. Graphics, sound, software base and sheer adaptability make the STE the only 16-bit computer worth considering. However it is interesting to project what will happen to the STFM.

Obviously with about two million of the machines already in place around the world there's going to be no drying up of third party support. The STE and STFM are similar enough to make it commercially viable for manufacturers to continue supporting the STFM for many years to come, but will it remain a computer that the hobbyist prefers?

One of the most consistent complaints from the STE community has been the amount of software which takes advantage of its superior hardware. As more and more STEs make their way into homes and offices, the third party companies will start improving their software and hardware. Therefore it's easy to predict a certain amount of snobbery creeping in; there are many precedents for this.

The Atari market remains buoyant despite a considerable amount of doom laden comments from software and hardware companies. The ST range sold very well over the Christmas period and is now out-pacing lesser computers such as Commodore's. Therefore it seems incredulous that software companies, particularly those in the States could be considering dropping support for the machine. The simple fact is that because the ST is so versatile, money is spent on a wide range of software; ST owners don't just play games.

STEREO STFM

It's easy for an STFM owner (I'm one) to be jealous of the STE's stereo sound capabilities, particularly those phono sockets on the back of the computer. Companies haven't exactly been quick to respond to this, but hardware is slowly starting to appear which soups up the STFM's puny internal sound chip.

The game *BAT* from Ubi-soft came complete with its own stereo sound card, MPH has produced a stereo cartridge and now Microdeal has jumped on the stereo band-wagon.

Playback is a stereo sample player

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for the entire ST range which plugs into the cartridge port. The unit can be used with Microdeal's own tracker software: *Quartet*. The whole Playback cartridge consists of a drum program, a *Quartet* stereo demo driver and software to enable you to incorporate stereo music into your own programs. The *Drumbeat* program enables you to load up to 15 samples into memory at once, along with 50 patterns.

The Playback package costs £29.95 from Microdeal, PO Box 68, St. Austell, Cornwall, PL25 4YB. Telephone: 0726 68020.

MUSIC MADE FUN

UBI-Soft, better known for its stonking games, will be releasing a music program aimed at the complete novice. The program utilises the MV16 interface sound card which comes with the game *BAT* enabling the ST to output 16 voices at once.

The program (it says here) makes use of a graphic interface. This means that you can draw sounds, on screen, with the use of a mouse. *Music Master* includes MIDI in and out facilities, enabling the user to play around with keyboard and sequencers with little knowledge of music itself.

An equaliser, filters, tuning delays, reverberations and vibrato can all be added to the sounds and these can then be output to either the synthesiser or the MV16 card. The voices run at a resolution of 8-bits and 15KHz. The program will be available at the end of September.

NEW FOUR MINUTE WARNING

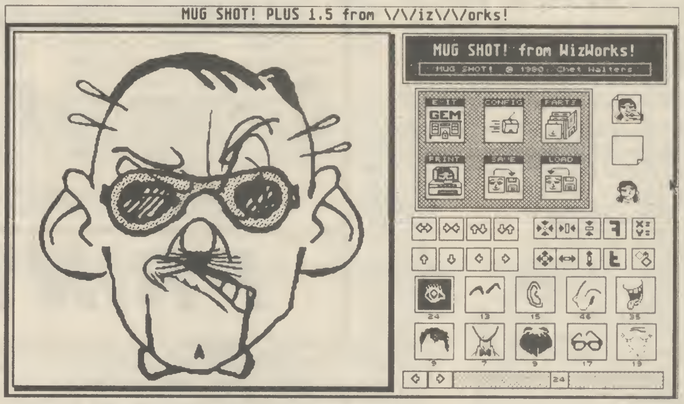
Four Minute Warning is a recently-formed software house specialising in MIDI music software has recently been formed. The company will be distributing packages from Mississippi Software along with its own software.

The Mississippi Software editing range is designed for a variety of synthesisers. Owners of a Roland U-110, U-20, Alpha Juno and Super JX, Ensoniq ESQ-1 and ESQ-m or a Yamaha DX7 can use an editor designed specifically for their machine. These can all be used within C-Lab's Softlink multi-tasking hardware.

Filemaster is a sample load, audition and transmit program designed for use with the Akai X-7000 and S-700 disk samplers and Roland's S-10 and S-220 machines. This software would enable a user to overcome the problems with the 2.8-inch "Quick Disks" built into these samplers, namely their prohibitive price. *Filemaster* costs just £20.

Freebase (I'm reliably informed) is an "integrated self-programming sample database and listing generator" (phew). This software enables the ST owner to categorise samples using some super-whizzo identification algorithms. The package would be best suited for people like studio managers who need to keep up-to-date records on a sample library.

The program will be available by the time you read this, although price isn't known at this time. Contact Four Minute Warning, 298 Horbury Road, Wakefield, West Yorkshire, WF2 8QX. Telephone: 0924 386527.



• **Mugshot** *might not be the latest in forensic science but it is a hell of a lot of fun.*

NOT ANOTHER BITMAP FAME CLAIM?

Well, yes, actually. Those celebrities of the ST world the Bitmap Brothers have found more coverage on television. This time one of their games was the star, which probably upset Eric, Tom and Steve!

The game in question is called *Magic Pockets* and was featured on the kiddies Saturday show, *Motormouth.* Kids get to phone in and play the game over the phone although on its first outing, Andy Crane and Steve Johnson of the show indulged themselves. The music for the game was provided by Betty "ST fan" Boo. Renegade tells me that the game should be released for general consumption "some time in the summer." Incidentally if you've spotted an ST on TV then drop me a line.

WHAT A MUG!

I've just been sent an extremely funny program which goes by the name of *Mug-Shot*. This wonderful program enables you to build up faces "photo-fit" style. Two different sets of facial parts are included on the disk, cartoon and normal.

The cartoon features are great fun, making it quick and easy to knock up humourous faces. Once you're happy with the general look of the face you can enter a face editor. This enables you to directly modify the face with a pen and add text.

Mug-Shot costs £29.99 and is available from Gralin International, 11 Shillito Road, Parkstone, Poole, Dorset, BH12 2BN.

Andy Hutchinson

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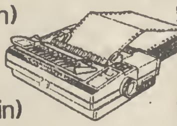

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ATARI 520ST

ALL ATARI STE/STFM PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS CARRY A FULL 12 MONTH WARRANTY. ALL STE MACHINES ARE CHECKED PRIOR TO DESPATCH. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES. ALL OF OUR STE COMPUTERS HAVE THE "PLUG-IN" RAM SOCKETS AND DO NOT REQUIRE A SOLDERED IN RAM UPGRADE. ALL OF OUR STE COMPUTERS ALSO HAVE THE NEW DMA CHIP SET FITTED ALLOWING TROUBLE FREE OPERATION WITH ATARI HARD DISK DRIVES. ALL STE MACHINES COME WITH THE NEW CONTROL PANEL SOFTWARE.

	512k	1mb	2mb	4mb
520STE STANDARD PACK. consists of the computer with mouse, tv lead, manual and all connecting leads etc. The Standard Pack is supplied with NO software.	£319.00	£339.00	£379.00	£459.00
520STE TURBO. consists of Standard Pack and STOS, Basic, Hyper Paint II, Music Maker II, 8 games (Indiana Jones, Impossible Mission II, H.K.M, Super Cycle, Outrun, Dragons Breath, Anarchy & Blood Money) and a joystick	£339.00	£359.00	£399.00	£479.00
520STE BUSINESS. consists of Standard Pack and also comes with K-Word 2 word processor, K-Data database, K- Spread spreadsheet and Metacomco Basic programming software.	£359.00	£379.00	£419.00	£499.00
520STE TENSTAR. consists of Standard Pack and Asterix, Chess Player 2150, Driving Force, Live + Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Squeek, Trivial Pursuit II and a joystick	£339.00	£359.00	£399.00	£479.00
520STFM STANDARD. consists of the computer with mouse, tv lead, manual and all connecting leads etc. The Standard Pack is supplied with NO software.	£235.00			
520STFM DISCOVERY. consists of the Standard Pack and STOS, First Basic, NeoChrome and 4 games (Carrier Command, Space Harrier, Outrun, Bomb Jack) and a joystick	£245.00			
520STFM TENSTAR. consists of Standard Pack and Asterix, Chess Player 2150, Driving Force, Live + Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Squeek, Trivial Pursuit II and a joystick	£269.00			
520STFM BUSINESS. consists of Standard Pack and also comes with K-Word 2 word processor, K-Data database, K- Spread spreadsheet and Metacomco Basic programming software.	£289.00			

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DIY 1 KIT – 520STE to 1MB (2 x 256K cards)	£34.99
DIY 2 KIT – 520/1040 to 2MB (2 x 1MB cards)	£99.00
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ALL RAM KITS ARE SUPPLIED WITH INSTRUCTIONS, PLEASE CHECK YOUR STE CONFIGURATION BEFORE ORDERING

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512K Ram Upgrade with clock	£39.95
A590 20Mb Hard Disk drive	£279.95
A590 1Mb Ram Upgrade	£49.00
Roctec external disk drive	£69.00
Golden Image Handy Scanner	£195.00
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** NB : Games are not available seperately **

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Includes A1500 computer (1Mb RAM, 2 x 3½" Drives, 8 expansion slots), Commodore Hi-Resolution Colour Monitor, plus Software Including: 'Deluxe Paint III', 'Battle Chess', 'Sim City' and 'The Works' (business software).

AMIGA 1500 STARTER PACKAGE	**£ 949.00**

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Amiga 500 package as above	**£ 329.99**
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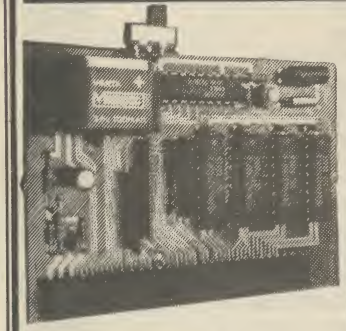
A500 SOLDERLESS RAM UPGRADES



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RAM Board as above, with 1MB FASTRAM installed	**£ 74.95**
RAM Board as above, with 1.5Mb FASTRAM installed	**£ 89.95**

N.B. : The expansion board requires Kickstart 1.3 to operate - Kickstart 1.3 upgrade available from us for £29.95

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REFERENCE-100 (100Mb version) ... £ 599.00

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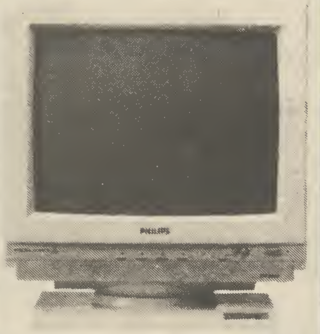

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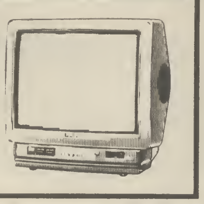

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ATARI

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520 STFM 'DISCOVERY PACK'

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1040 STE 'EXTRAS PACK'

Superb starter package, consisting of a 1040 STE with an excellent selection of serious/leisure software. The package includes :

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£449.99 Inc.VAT & delivery

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£609.99 WITH 4MB RAM FITTED

Mega ST1 with SM124 mono monitor	£ 599.00
Mega ST1 as above, upgraded to 2Mb RAM	£ 769.00
Mega ST1 as above, upgraded to 4Mb RAM	£ 879.00
Mega ST2 with SM124 monitor (2Mb RAM)	£ 849.00
Mega ST4 with SM124 monitor (4Mb RAM)	£ 1099.00
SM124 monochrome hi-res monitor	£ 99.00

ST SOLDERLESS MEMORY UPGRADES

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Upgrade the memory of your ST in minutes and easily with our new, fully software compatible RAM upgrade board. Designed for pre-STE machines, the unit accepts SIMMS slot-in memory modules, making RAM fitting simplicity itself. No electronics knowledge needed! Available with or without RAM modules. Allows upgrade in stages of 1Mb, 2 / 2.5Mb and 4Mb, as and when necessary. Straightforward installation - full, comprehensive instructions provided.

N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a little soldering.

RAM Upgrade with board unpopulated	£ 59.95
RAM Upgrade With 512K RAM Installed - upgrades a 520 to a total of 1Mb RAM	£ 89.95
RAM Upgrade With 2Mb RAM Installed - upgrades a 520 1040 Mega1 to 2 2.5Mb	£ 174.95
RAM Upgrade With 4Mb RAM Installed - upgrades a 520 1040 Mega ST to 4Mb	£ 284.95

also available ....

PLUG-IN 512K RAM UPGRADE FOR ANY MODEL OF 520 ST

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Citizen ProDOT 24 Normal RRP: £ 746.35 Inc.VAT

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WHOLE WIRED WORLD

TV standard graphics for the Amiga, a disk doctor for the ST and user groups for the Lynx. Steve Gold reports.

DCTV UPGRADES FOR AMIGA

Regular readers of this column will recall Digital Creation's DCTV video digitising system for the Amiga which I mentioned in my report on last November's Comdex. Now the Rancho Cordova, California-based company has announced two packages for the $495 system, and promises three more by the end of March.

DCTV stands for Digital Composite Television. The Digital Creations system uses the Amiga's chip memory as its framebuffer, with the result that device creates a full colour screen image with the same resolution as conventional PAL/NTSC television. Images can be manipulated and/or edited as required.

The new software for the system includes a slow-scan digitiser that can take almost any input video signal and convert the frame into digital format in under 10 seconds. The other package currently available is a conversion suite of software that allows a DCTV signal to be output in a variety of other formats.

The three remaining packages, which will ship `real soon now', will further enhance the DCTV system, so the company claims. The packages are an animation module, a paint package, and an RGB paint package.

The DCTV animation package is also a paint system designed with a user interface similar to the original DCTV paint software which comes bundled with the basic system. So why not bundle the animation, advanced paint and RGB paint modules with the DCTV system in the first place? According to the company, the extra modules have fairly hefty RAM requirements (3Mb on the animation system) which not all Amiga owners will have, so it's making them available as an optional extra.

The DCTV paint package, meanwhile, is the company's high-end paint system for its DCTV system. Unlike the paint package that comes bundled with the basic unit, this one stores the images in a slightly different file format that takes advantage of extra RAM (5Mb recommended) as it is available.

Last but not least is the DCTV RGB paint package, which is billed as another high-end paint system for the DCTV. The package was written to service the needs of the DTP community.

Pricing on the three new DCTV packages has yet to be confirmed.

Contact: Digital Creations – Tel: 0101-916-344-4825. Fax: 0101-916-635-0475. BBS: 0101-916-721-3948.

EDHAK 2.0 "REAL SOON NOW"

Software author Craig Harvey reports that version 3.0 of *Edhak* will be available shortly. The new version of the Atari ST disk doctor package remains shareware, though Harvey says he may review this, depending on how version 3.0 is received.

Edhak 2.1R, the current version, is still available on a variety of on-line systems, with shareware registration set at $18.95. A printed and bound manual for the package is available for $5.

So what's new about version 3.0 of the package? According to Harvey, the package includes a `Kwicksend' facility that allows a data packet of any size to be lifted from disk and sent to any other application open on the ST at the time. Another new feature on version 3.0 is a graphics/ASCII flip mode that allows Degas files to be viewed as well as edited in real time.

Meanwhile, Harvey seems to be getting a little fed up with the shareware system. Version 2.1R can be downloaded from several on-line systems, but the unregistered version cannot save to disk; to do this, you must register your copy with him.

Contact: Clear Thinking, PO Box 715, Ann Arbour, MI 48105, United States. Tel: 0101-313-761-2444 (BBS) E-mail: 73047.600@compuserve.com (via Usenet).

Contact: Softrek, PO Box 5257, Winter Park, FL 32793, United States. Tel: 0101-407-657-4611.

CASEY FOR STACY

If you're lucky enough to own an Atari Stacy, the portable version of the Atari ST, then you'll be glad to know that Multibyte has unveiled the Casey range of accessories for your machine.

Flagship to the range is the Casey Plus, a $368 semi-rigid case for the Stacy that includes rechargable batteries which will power the machine and accessories for four and a half hours. The standard Casey, meanwhile, costs $20 less and has the same features, but slightly reduced battery power. The Casey Junior is the same semi-rigid case but without the batteries. Users can upgrade the $135 unit with a $198 rechargable battery pack that fits inside the Stacy's battery compartment.

Contact: Multibyte president John Ogden on 0101-703-406-9139.

DREAMPARK UTILITIES DISK

Software prices for the Atari ST keep on falling. Dreampark has just unveiled its new disk manager/utility package called, appropriately enough, *The Utilities disk.*

The package, which sells for just $19.95, includes features such as a fast disk formatter, automatic virus protection while formatting, smart copying routines, and a utility to write your hard disk's free space to the ST's desktop.

Contact: Dreampark Developments, 1390 South 1100 East, Suite 104, Salt Lake City, Utah 84105, United States. Tel: 0101-484-9809. Fax: 0101-801-466-2541. BBS: 0101-801-569-1949.

TURBO ST PRICE CUT

Wayne Buckholdt, the author of *Turbo ST* has announced that he's cut the price of his *Turbo ST* package from $49.95 to $39.95 with immediate effect.

Turbo ST replaces, as well as extends, many of the ST's software drivers, particularly the screendrivers. The move means that it's now even cheaper to drive your Atari ST faster.

In parallel with the price cut comes news that *Turbo ST* distributor Softrek now accepts Visa and Mastercard by phone. UK readers should add $5 if they're thinking of ordering.

BORLAND OUSTS MCGRAW-HILL

Borland has terminated its publishing contract with McGraw-Hill, the company which produced books based on Borland products. Existing titles will still be printed, but the new two-year contract goes to Bantam Books.

The official line is that the Bantam titles will support Borland's business applications and language products, and will be published for novice, intermediate and experienced users.

All the new books from Bantam will have foreword by Philippe Kahn, Borland's chairman, president and chief executive officer. ■

LYNX NEWS ON-LINE AND ON PAPER

• *The new on-line Lynx user group is well worth a look.*

The *Atari Portable Entertainment* (*APE*) newsletter has announced it is now publishing on a quarterly basis. The new US newsletter costs $6 a year to subscribe and, according to all reports, is well worth the investment.

Editor Clinton Smith is making potential readers an offer they can't refuse (he says). Anyone who writes in can claim a free issue or, if they pay the $6 subscription, will receive five issues for the price of four.

Contact: Clinton Smith, *APE*, 2104 North Kostner, Chicago, IL 60639, United States.

● Meanwhile, Dave Schwartz, an on-line user of Genie, Bix and Usenet, has begun publishing a free monthly newsletter for Atari Lynx users.

The first issue is available on-line from several systems, as well as via E-mail. According to Schwartz, there are plans for the newsletter to be distributed in ASCII form without any copyright to ensure rapid dispersal. He's also looking for contributions.

Date-lined for the end of January, the first issue includes a report on Atari signing up six new developers for the Lynx: Apti Game Systems, Cyber Labs, Reflex Software, Shadowsoft, Telegames USA and US Gold. Also in the first issue are long lists of solutions, hints and tips on all the latest Lynx games, making it well worth the cost of downloading or requesting via E-mail.

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Tim Smith's CENTREFOLD

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OPENING TIME

Last week I told you about the rather stupid game which my colleagues played when they renamed my Mac wastebasket, "It's all right to put things in here honest because they'll be safe". Ha bloody ha ha. Well, I spent a few trusting days putting stuff in there; I even documented this act for my hypermedia diary (to be published later this year, price £246 plus p&p). If you look to the left of this, my opening column, you will see exactly the sort of important files about which I speak.

Now, they say that hacking is bad enough but this sort of stupid behaviour is too much. In fact it led to one Sir Staurt Anderton, ex-deputy editor of this parish, being ousted from his position as all round clever fellow and advisor to the Queen on things computeresque. Sir Stuart is now editing sister publication MacPublishing. £10 per month with a free cover disk containing loads of wonderful things for the Mac such as new fonts. See the special Centrefold exclusive.

In fact much of the Centrefold this week is Mac related. Why is this? Because my PC developed a virus that's why. Would you believe it? Everything goes wrong at once does it not? This particular virus puts a message up on screen which reads, 'I am a really clever programmer who lacks imagination so I thought I would hack someone off. A school or hospital would do, failing that, you. All your files are about to be screwed up totally, and I wouldn't be surprised if your modem was calling the Ulan Bator speaking clock right now Ha!"

The most irritating thing about this is that the disk which contained the virus came from one of my ageing relatives who is presently doing a computer science course at one of the country's most highly thought of educational establishments. (*what, Wormwood Scrubs? Sub*)

Well, that's enough griping, but I do like a good gripe every now and then. Doesn't everyone? No answers on a postcard for that one, please...

A CENTREFOLD EXCLUSIVE

LOW COST TYPEFACES FOR THE MAC CLASSIC

Cutting edge software, and now typographic, house KnoBsoft has announced a wide range of new fonts for what is expected to be the mass of new Mac Classic owners.

The one you can see pictured below is the new CraPoster Bodildly Gothic eXtrabOld. CraPoster is available in a number of weights and sizes, from four to 1234 point. There is also an italic version.

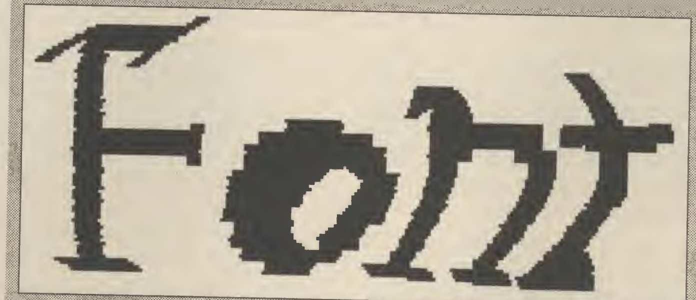
In order to produce cheap fonts for what is expected to be a million of new Mac users, KnoBsoft has decided not to bother with all of the letters of the alphabet, Z, X, V and B have been excluded. Happily the port over from the once proud MSX seems not to have suffered.

Commenting on the success, KnoBsoft MD Sid Smith (*isn't he your brother? Sub*) said: "We're very pleased that we managed to get out in time... er make the move to the Macintosh. Although neither Apple nor Adobe have as yet firmed up an ongoing contract scenario, agreement-wise, we feel certain that they will be soon in uptaking. Your readers need only send a cheque for £44 made out to no one right now thank you very much, and we will have a copy of CraPoster Bodildly Gothic eXtrabOld winging its way to them on three inch disk. There were a few problems getting used to the differences in MSX and Mac technology but we think we've cracked it now. We are sure that our fonts will make Neville Brody sick and Eric Gill turn in his grave. They are definitely the most prestigious fonts in the Mac range thank you very much, and are you going to Aunty Julia's birthday because Mum wants to know?"

We asked just how much KnoBsoft knew about the art of type, having previously been associated with such packages as the shoot-'em-up *The Sound of Music*, and *Empty Stuff Invaders*. Mr Smith replied bullishly: "We know our x-heights from our bowls. We are soaked in the history of type, right back to *Stop Press* on the PCW... Well, are you coming or what?"

We spoke to Herr Speighermannn, the emminent German typographer who told us: "Vat is it with you people? Always me up-ringing in the middle of the nacht? I but a humble fishmonger am, now p*** off out of it!"

Expect more news and some extra special bargains and prices very soon.



• *The brand new low cost CraPoster Bodildly Gothic eXtrabOld font from KnoBsoft.*

FACTS ALOT

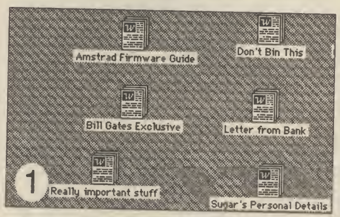
According to a certain french software house which ryhmes with Boris-e-elle, American game players are more subtle than Brits.

Macintosh DTP package Express from Quark, version 3, sends horrid lines down picture files if TIFF and PICT formats are mixed on a page.

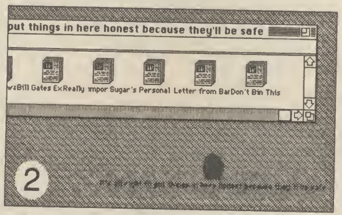
Mac Cleverclass

With Lisa Scuzzy

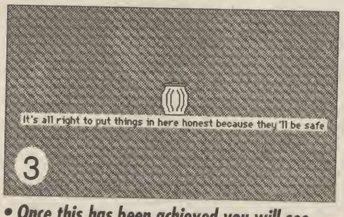
This week we tell you how to give a close enemy or boss a nervous breakdown by trashing all those essential files in one go.



• *First make sure your victim has some incredibly important files ready prepared. Then rename the Wastebasket with a helpful title.*



• *Then watch as they drag them to certain doom. Be sure that there isn't an adult present, and do check that the files are all there.*


It's all right to put things in here honest because they'll be safe
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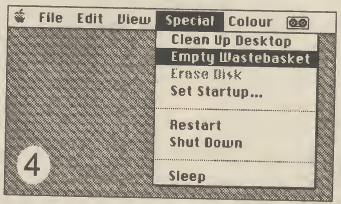
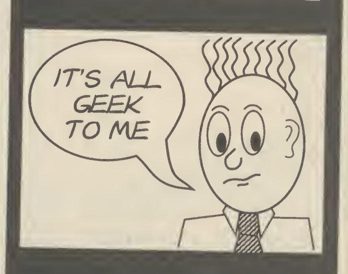
• *Once this has been achieved you will see this enormous fat basket all ready to puff the files out like so much methane vapour, lovely!*



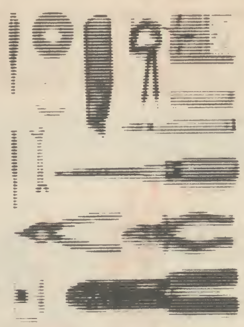
• *Go back to the top of the screen and empty that wastebasket just as quickly as you can. This will well and truely irritate a colleague.*

THE GEEK


IT'S ALL GEEK TO ME

This week he decided to reformat all his disks ... into the shape of a Bolivian coffee dealer called Emilio Hernandez who has a slightly gammy left leg. His CPC read them anyway.

CIRCUIT CITY



How much RAM does your Amiga have? Not enough? This week, Circuit City looks at some of the ways you can give your Amiga A500 a much better memory.

When Commodore introduced the Amiga, it offered a computer that was so far ahead of its competitors that it was guaranteed expansion and upgrade possibilities for the foreseeable future.

Several years later and the Amiga continues to grow with new models, new peripherals and expansion capabilities well beyond anything Commodore had originally planned.

The original operating system, AmigaDOS, has graduated via 1.2 and 1.3 to the pleasant and currently little seen version 2.0 and the machines are led by the flagship 3000 model.

Part of the Amiga's essential system has found its way into Commodore's CDTV and many commercial and industrial applications use the Amiga as their prime mover.

Most popular is the basic A500 model which comes with 512k of RAM and a single 3.5-inch disk drive. A modulator is available to allow the Amiga to drive a TV but the video output on the back of the Amiga is best seen through a dedicated RGB monitor. Memory is a simple addition but there can be traps for the unwary.

MEMORY

The A500 has 512K on board and a trapdoor underneath for another 512K. By simply opening the trapdoor and slotting in a memory card, you can upgrade your bare half-megabyte Amiga to one megabyte. Commodore supplies a card to allow you to do this, but there are many third party suppliers which produce cheaper memory upgrades.

The cheapest way to do the upgrade is by buying a bare board and adding the DRAM (memory) chips. It is possible to buy a bare board for anything upward of £15 and a bare board with a battery backed clock can be obtained from £25 or so. If you have suitable spare DRAMS from other life expired machines this can be the cheapest way to upgrade.

If you haven't access to cheap DRAMS, a populated board can cost as little as £35 or £45 for one with the clock. This upgrade to 1Mb is theoretically as much as the A500 can take in the memory expansion trapdoor. To get beyond the magic megabyte, stronger medicine is called for. Simplest by far is a memory expansion hung on to the side expansion port. Alternatively, internal boards can hold the memory. This allows a theoretical maximum of 8Mb expansion plus the 512K of the bare machine.

It's at this point matters start to become confusing. Importantly, the only memory that can be legally added to an A500 without kissing the warranty goodbye is the 512K in the slot underneath and that which goes on to the main expansion bus.

There are devices that will go into the memory slot underneath that exceed the 512K maximum. Up to 4Mb is claimed for the trapdoor underneath but in order to make the Amiga see this, a flylead is taken to Gary (the gate array chip inside the Amiga). This cannot be accomplished without opening the machine so the warranty dies with its installation.

There are internal memory cards that involve the removal of the Amiga's main processor (68000) and it's replacement with a memory board. The 68000 is then plugged into the memory board and this is populated up to 8Mb. Some of these internal memories have a separate socket for a maths co-processor and the fitting of a 68881 in this allows the Amiga to take on mathematically intensive tasks more efficiently. Again a flylead is needed to patch the board to the gate array for this task.

If you're a game player who wants to take advantage of the programs that run in one megabyte, a 512k expansion slot is provided underneath.

For jobs that require memory above and beyond this the choice is up to you but it can be difficult to mix and match, say, memory in the trapdoor, memory on the expansion and memory inside the machine. Work out the memory requirements for the sort of jobs that you will need to do and pick the upgrade route most suitable.

POWER

Memory doesn't work for free and as you add more memory you increase the drain on your machine's power supply. A simple rule of thumb is that if you're going to use a machine with more than 2Mb of memory or if you're going to add a lot of power hungry peripherals – get a bigger power supply.

There doesn't seem to be much consistency in the output of power supplies. Some will curl up their toes at the mere whiff of an extra drain while others will happily drive a star wars pulse laser for decades.

Using a power supply that's not up to the job can damage both the power supply and your A500. It would be a shame to kill a good computer and power supply when the cost of the latter (£25-40) is a pittance compared with the 8Mb upgrade that it may be driving.

UP THE RAMS

The Amiga can have three different sorts of memory and this can sometimes be confusing. Here is what they are and what they do:

Slow RAM. This is the 512K expansion that takes a standard A500 up to 1Mb. It lives under the trapdoor under the machine. This is the poor boy in the memory stakes having all the disadvantages, but none of the advantages, of chip RAM. With the release of Obese Agnus (Fatter Agnus) this extra 512K is turned into chip RAM.

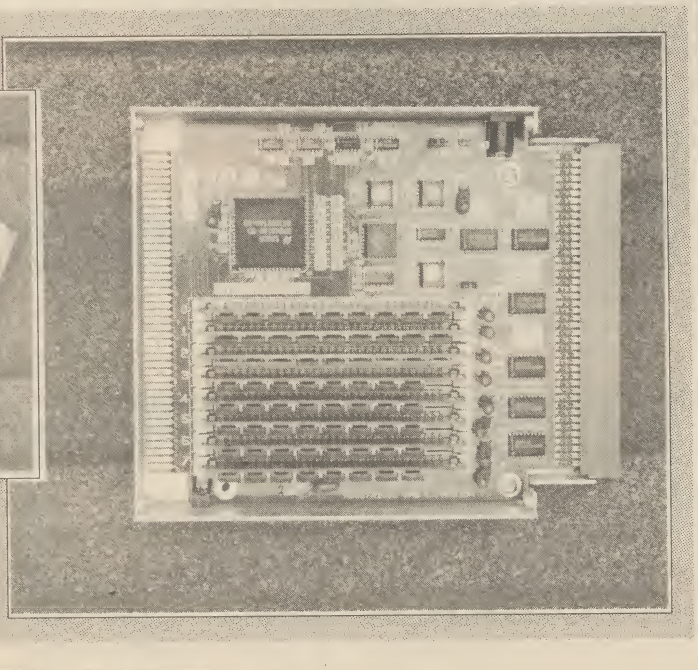
Fast RAM. This is any RAM that is used as normal expansion on the expansion bus or elsewhere. It cannot be accessed by any of the custom chips and thus is only ever available for the processor. Because of this, there isn't any contention problem.

Chip RAM is the standard 512K that comes with A500 although with a new machine sporting the Obese Agnus chip, 1Mb of chip RAM is possible.

Chip RAM can be accessed by both the central processor and the custom chips. As it runs at twice the speed of the processor the central processor and the custom chip set can take turns at accessing it without any noticable loss of speed. In order for data to be accessed by the custom chips, it must be in chip RAM. This could be graphic images, sound files or even samples.

Obese Agnus. If you're not sure whether you've got a scrawny or obese Agnus, there's a short program listing in *Just Amiga Monthly* (issue 2) that will check this for you. You can get this from, JAM, 75 Greatfields Drive, Hillingdon, Uxbridge, Middlesex UB8 3QN, for a couple of quid. ■

MEMORIES



• Cortex bares its soul to show eight megabytes of memory upgrade.

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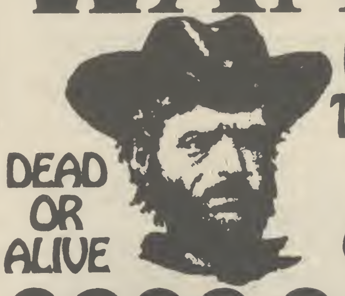

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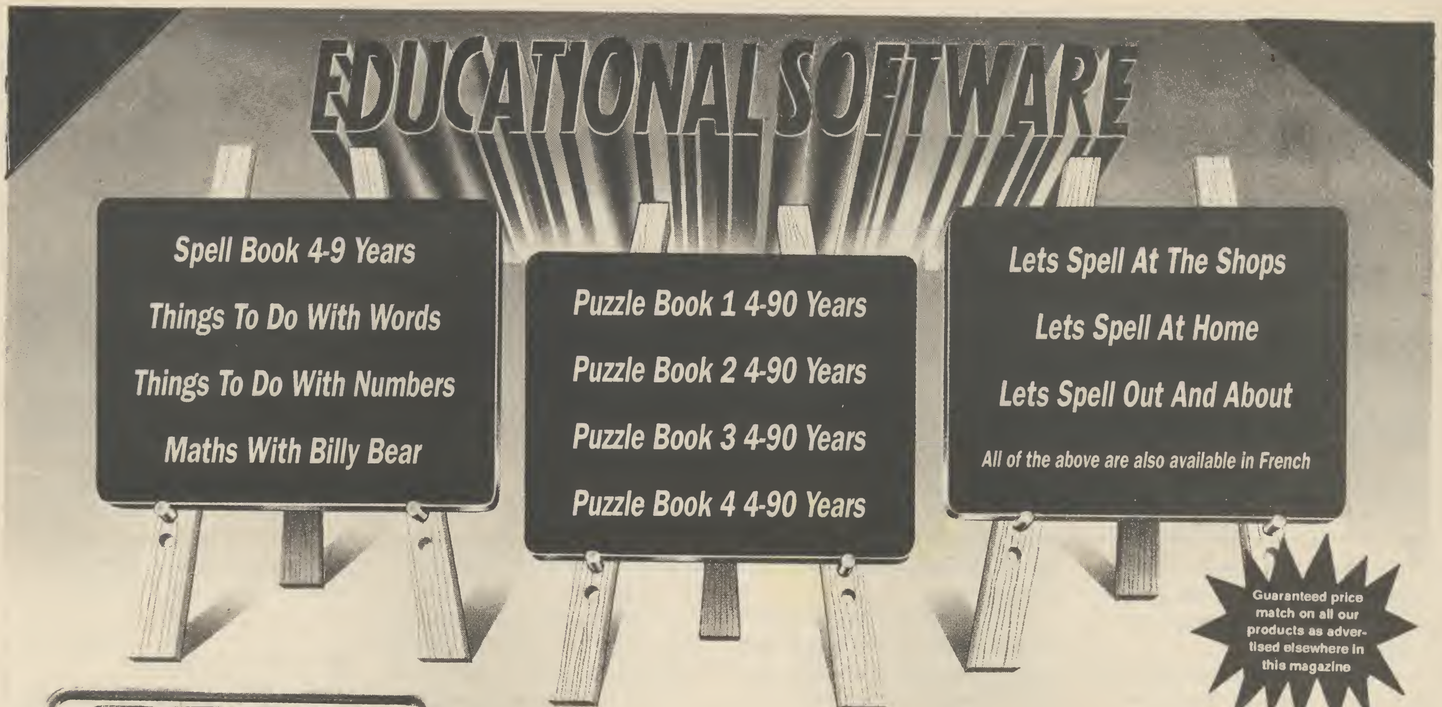
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■ HELP! MIDI networks

I have an Amiga, an old green screen CPC, and my friends have a PCW, a PC and an ST. We meet regularly at a 'private' club to enjoy our mutual hobby and after a couple of years gameplay, we have started to do more serious things.

What we would like to do now is set up some sort of network where all of the machines are in contact with one another. One area that we've already covered is MIDI and we each have an interface. MIDI is a form of networking, but is it possible to move files other than songs and MIDI data around a MIDI network? Ideally, the transfer of data should be a background task that can be moved to the foreground when necessary. Your help is required.

Joe McFadden, London.

You're right when you say that MIDI is a networking system. MIDI sends serial data around a small network at around 31.5K Baud. When MIDI was put together, it was envisaged as a universal standard to allow musical instruments to be connected together. The 16 channels could be assigned to individual instruments or groups of instruments, giving individual control of each instrument or group. This means that in a MIDI system with several instruments, expanders and computers/processors, each is looked at as a node to a central network. A computer might broadcast several MIDI channels at once but each node would only pick up the channel data that was assigned to it. Thus in a professional MIDI set up, it's possible to use one central processor or server to simultaneously send data to the individual nodes.

This sounds like a fine system for converting into a small local area network and file server and indeed, at least one company has used the MIDI implimentation of the Atari ST to make a data transfer network. If the members of your group have a sound knowledge of MIDI and their own computers it is possible that you may be able to write software for the individual machines that use MIDI.

■ HELP! Spectrum drivers

I have a Spectrum Plus 2, which is used regularly (if not constantly), for which I have been considering the purchase of a PlusD Interface and Drive from Datel Electronics. It has occurred to me, however, that two old Atari machinesof mine may be of use. I have an Atari 1050 Disk Drive. Would it be possible to use this and if so how?

Also I have been having some problems with the Plus 2's tape deck. Is there any way I can Interface an external tape recorder? I would be very grateful for any help you can give.

P.D. O'Toole, Dover, Kent.

Firstly, you'll save yourself much grief and heartache if you keep on saving and buy the right drive for the job. With enough patience, solder and knowledge you can connect most things but this isn't a job to be taken on by anyone other than an expert. A simple mistake when interfacing a peripheral can damage both your peripheral and computer. If you have a good computer shop in Dover with a knowledgeable technical staff, they may quote for the job. This will probably prove cheaper than a dedicated drive, but not as elegant. Alternatively, you could contact one of the specialists who do leads and interfaces. Try Simpson Electronics on 0332 760353 or RSD Connections on 0992 584205.

It's the sort of job that you shouldn't take on if you have to ask how.

Your problem with the tape deck would be simpler to address if you'd said what it was. It is possible to add an external tape drive to the Spectrum, but there are things that you must first be aware of. The internal drive has pre-set optimum levels and if you're using a generic cassette recorder you must be sure to duplicate these. Much better to install a replacement cassette drive or have your local computer dealer do it for you.

Before you go disemboweling your poor little speccy though, there are some faults that cause no end of trouble to the loading of programs from tape. First, clean the heads using a proprietary tape or liquid cleaner. If this doesn't do the trick you could have a problem with the tape azimuth adjustment. This can be cured either by your dealer or by using an azimuth kit. It's a bit of a fiddly job, but can be accomplished by anyone with a reasonable degree of manual dexterity.

● The azimuth adjustment of the tape deck alters the angle at which the tape crosses the play head. As the part of the tape and head that provide and access the data are smaller than 1mm wide, it only takes a very small degree of maladjustment to cause data loading problems. Any data cassette unit in constant use can go out of azimuth, but the adjustment to return it to synchronicity is simple and only takes a couple of minutes with the right program and a small screwdriver can carry all of the extras that you require.

■ HELP! Amiga bits

I have lying around a SCSI HD and 8Mb of SIMMS. What I am after is a board that will allow me to connect these items to an Amiga A500 and also a 68881 co-processor. Do you know of such an item?

M S Reynolds, Staffs.

Like any problem or potential project, your hard drive, memory and co-processor could probably be attached to the A500, given enough time, money and technical know how. Like most potential projects of this sort, it runs into a couple of problems.

Firstly, the way that an Amiga addresses a hard drive isn't quite standard, so welding any hard drive other than one designed to run with the Amiga will certainly be a case of tears before breakfast. There are several generic devices to add memory to an A500 and you may find that some of them are available unpopulated. However, a simple add-on card that does all of the things that you need isn't available (or at least, I couldn't find it).

The most likely solution is the Checkmate A1500. This is an add on for the A500 that takes the internals of an A500 and recases them in a similar, but much more elegant way to the B2000. Unlike the lumpy B2000, the A1500 can be built into a rack system. This way, you end up with all of the advantages of the A500 and the expansion possibilities of the B2000. The A1500 is a basic system that you can upgrade indefinitely.

I chatted to Steve Jones at Checkmate and he suggested that you contact him with details of the expansion you wish to carry out. He can then help you to decide if the A1500 is your ideal upgrade route. The A1500 costs £230 and can be obtained from Checkmate on 071-923 0658.

● The A1500 is an expansion kit for the A500 and is not to be confused with the Amiga 1500 which is Commodore's own mid-level Amiga and bears more than a passing resemblance to the B2000.

■ HELP! Pet printer

I wonder if you can help me. I have been given an old Commodore Pet system, including printer and I hope to be able to use the printer with my Amiga. The problem is the connections. I am able to make my own cable up and I know the Amiga port is to the printer.

The printer is called a Commodore 8023P and the manual refers to it as a 'serial impact dot matrix'; whether that makes it a serial printer I do not know. I do know, however, that the port is IEEE-488 and the printer dates from about 1982.. Do you know, or can you find out, the pin outs for this printer?

It would be a shame to scrap it as it works well on the Pet.

Tony Guyon, Essex

And we're not so sure either. Even H F-W who's at least 107 years old can't remember the last time anyone needed to rivet something from a Pet on to a later machine. There's one way to find out though – check the connections on the Pet printer (the manual should help there). The serial port of the Amiga is well documented in the manual and it should be possible to fabricate a lead to connect the two. It's then possible using the printer selection page in preferences to select a serial printer. Fingers crossed and hope for the best, it should work. If you aren't capable of making the lead check out the phone numbers elsewhere on this page.

■ Help! Neodesk naughties

I have recently upgraded my copy of Neodesk to version 3 and I am having problems using Protext Version 5 within it. If I remember correctly when someone at Future was commenting on NeoDesk 3 in a recent issue of *NCE* they also experienced similar problems, but in a later issue said that they had managed to overcome them. I would be obliged if you would be so kind as to pass on this tip to me so that I can sort out my system.

For your information, my set-up con-

sists of a 1040STFM (upgraded to 2.5Mb by Frontier Software) a Star LC10 printer, an external floppy drive from Evesham Micros, a Power Computing 48Mb Power drive 900, and a Philips Pro 8CM852 Colour monitor.

Chris Phelps, Gloucester

I spoke first to Doug Thompson from Arnor, manufacturer of *Protext* . He told me that they'd checked *Protext* and found that the problem was caused by an incompatibility inherent in *Neodesk.*

Electric Distribution handles *Neodesk* in the UK and confirmed that the authors of *Neodesk* were working on a remedy for the problem and that a maintenance disk would be distributed free to all registered users of *Neodesk* as soon as it was available.

In the meantime, a simple but effective remedy is to turn off the *Neodesk* control panel.This should cause peace to reign again in *Protext.*

■ HELP! CDTV

Perhaps you can enlighten an Amiga owning non-techie on which would be the best way to enjoy the benefits of massive storage and very fast retrieval which CD technology promises. I have read and drooled over descriptions of Commodore's CDTV and now I read of Philips CD ROM for under £400.

Now here's where I show my ignorance – can you save files to a CD ROM as well as retrieve them? I believe ROM stands for Read Only Memory. Does that mean I cannot save data to the CD? I understand the same applies to CDTV. In other words what's the difference and would I also need a hard drive to achieve a fast retrieval and save set-up?

R.C. Whinnerah, Herts.

Like the video recorders of the seventies and eighties and the variety of computer systems available, it looks as though the optical disk technology battle may trample a few formats into the ground before settling. This means that several formats may make way for one dominant one. When choosing which technology to go with, remember, it's not generally the best but the strongest that survives (and I cite VHS videos, IBM PCs and Sky TV as three fine examples of rubbish ending up on the top of the heap.)

The light at the end of your tunnel, though, is the planned Amiga CD drive from Commodore. This is being sourced in Europe and should come out at a price well under £400. This will make it much cheaper than the equivalent Philips product which would need an additional interface.

The Amiga CD drive will be tagged the A690 and although it won't appear for a few months will offer Amiga owners access to CDTV software.

A CD ROM Drive or optical disk reader is much like the CD player in your stereo only instead of reading musical data to the amplifier and speakers it reads program data to the computer.

There are some very expensive systems that allow writing to as well as reading from optical disks, but those are rare. The sort of CD used in CDTV will be a read only storage system.

■ HELP! DTP Amiga

I am the proud owner of an Amiga, but I'm not going to enter the MCIBY debate, as I have owned both machines and like them both – the ST for user-friendliness and the Amiga for expansion possibilities and the pleasure of counting Guru's!

Anyway, let's get on with it. I need a DTP package for producing assignments for college, especially the user guides for programs, producing letter-headed paper, as I am part of a Young Enterprise Company, as well as a few other things.

Later on in the year I may be using the package for more serious things, so it needs to be very good, not complain about say, 30 plus pages in one document and be able to output to Postscript files, so that I can convert them to PC format and print them at college.

The packages I have in mind are *Page Stream 2* and *Professional Page 2*. Could you possibly tell me which one would be best for my needs?

Shaun Pugh, Dewsbury

If it were my choice, I'd go for *Pro Page 2.* The Amiga enthusiasts' magazine, *Jam* is produced on a B2000, A500 and a BubbleJet printer using it.

I spoke to editor Jeff Walker and he quite fairly said that both packages would be appropriate for what you want to do, both are good value and are up to the job.

■ HELP! Dead Spectrum

Please help me. I have two computers (SPlus3, and a 16K Speccy), and I would appreciate any help you can give me.

Problem one – about three months ago my Plus 3 died (the power supply unit crackled rather dramatically and then stopped working altogether). I then borrowed a friend's Plus 3 PSU to try with the computer before I bought a new power unit, but all I got when I turned the computer on was a blank TV screen. I tried tuning the TV in, but it didn't work.

What can I do, what parts do I need to bring it back to life and where can I get them?

Problem two – a few weeks after my Plus 3 stopped working, I bought a 16K spectrum for £3. When I got it home, I opened up the casing and looked inside, and I found several empty IC sockets. Are these for expansion? If they are, what is the maximum amount of memory and what chips will do the biz? Also – is it possible to change the CPU from a Z80B?Thanks for the help, and keep up the good work

M S Starling, Eastbourne, East Sussex.

I'm afraid the sort of problems that you're experiencing aren't for the enthusiast, but more for the expert. Take your Spectrum to the nearest computer repairer (or check out the adverts for firms doing the job) and get it repaired professionally. That way, you will get a warranty on the job and if it goes pop you will have someone to scream and kick out at and more important, to fix it.

I seem to remember that the baby Spectrum could be tweaked up to 48K and not much more. Don't replace the Z80A with the B model as this is a pointless exercise that can only cause incompatibility problems.

■ HELP! Slip stream

I have recently purchased a TEAC MT-2ST 40Mb internal tape streamer. Unfortunately it didn't come with any manuals, software, or interfaces etc. I haven't managed to find out anything about using this tape streamer on an AT compatible system from any shops, even though they are TEAC suppliers. Could you or any of your readers who have a TEAC streamer please let me know what extra hardware and software I need to buy to use it, or details of where I can find this out.

D J Berriman, Hull

I chatted to TEAC UK and they kindly offered to build me a recording studio. Lovely idea though this was, I explained your problem and they suggested that you contact Tek Data who handle TEAC computer peripherals in the UK. Tek Data is on 0782 813631.

■ HELP! Caveat Emptor

The good sense of your advice on Local Dealer v. Mail Order Purchase is much appreciated. However, one of the problems is that the best local shops stock mainly the obvious PCs, like Amstrads and Olivettis with sometimes an odd fish like the Atari PC-3 with the unbelievably old fashioned 8088 CPU and EGA display .

However, the clarity of the Atari EGA monitor looks very good. And every time it is the Amstrad VGA monitor with bulbous screened soft-edged milky display that puts me off. Their monitors seem to be what has been called derogatively 'TV-Technology' rather than equal to the apparently crystal clear 28-dot pitch Super VGA of the Viglens and the recently so well reviewed Austin 286. Putting it bluntly, the Hercules and EGA look a darn sight better than Amstrads VGAs or the Olivetti's rather coarse-grain effort. And I don't think I'm alone in this view. What do you say? There are better monitors than these for sure, but dealers just don't want to know and try to sell you the latest PC3286 from Amstrad.

The answer may be to find out if an Austin 286 can be ordered through my own dealer. Or am I just another mug who swallows the opinions of a reviewer too easily? Or is it that firms like Austin are handicapped by distribution and lack of extensive advertising that always puts Amstrads in the front rank?

Finally, what do you think of putting a KCS PC Power board into the Amiga 500 and also adding an A590 Hard Disk? Incredibly this would provide a PC with Hercules and CGA colour, extra RAM able to run FS4 (with a funny propeller sound I'm told) and a reliable 20.8Mb hard disk which can be partitioned for both modes of the Amiga – rather neat as Phil South says. He also adds that he prefers using it "to the AT on the floor"!

The total cost of this rather natty upgrade is £600 VAT Inc. Rather less than the near £1,000 for an AT 286 and certainly providing a lot of value for money. Mind you, I'd be even more keen if the KCS chip was a 286! Perhaps am Amiga with all stops out would be a lot more fun than an expensive AT 286? (I ain't spent nothing yet!).

Your views, please.

John Grey, Eastbourne

You are the customer and it's your cash. If the dealer is less than helpful or won't chase machines that aren't in stock for you, vote with your wallet. Go somewhere where you get proper service.

While most computer shops offer good and knowledgeable service promptly, there are still some around that think they are doing you a favour by speaking to you. Don't tolerate this attitude and go to one offering good service. Ask your dealer to get in the machine you are interested and check it out before you buy it.

On the subject of reviews, each review is the objective opinion of the writer. We can never expect to agree with everything a reviewer says and the sensible thing to do is use it as the jumping off point for your own research.

Finally, there are good and bad points about PC emulation on another machine.There are a couple of good hardware emulators around for the A500 but as yet, none of them support EGA or VGA, the current PC graphics standard. Compare the features and make your decision from there.

■ HELP! Drivers

I have just bought a Star LC24-200 24-pin mono printer, and I just think that it's fabby! However, I wish to make full use of its graphics capabilities so that I can output pictures (and do the odd bit of DTP) that I have produced on my Amiga 500. I would like to know, where can I lay my hands on a Star LC24-200 printer driver?

While looking through the 1.3 enhancer book, I noticed several 24-pin printer drivers, namely the Toshiba P35ISX and the Epson Q driver; would these be any good? Also, while looking through a Softville PD catalogue, I noticed on Amigas disk No 22 a printer driver generator; would this be any good for me?

David Harrigan, Derry, N. Ireland

The best way to get the appropriate printer driver is to telephone a PD house and ask them which disk has the specific driver for your printer on it. Many printers will work well from generic drivers, but if you can get a machine specific one, you'll get the best results.

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SATISFACTORY STATEMENTS

A problem can be its own answer – all you need to know is what the problem is. Mary Branscombe explains declarative programming.

All programming is eventually based on the logic of the internal circuits, but this is at a very low level and high level languages ignore this, allowing the programmer to use English-like constructs. Declarative languages, however, are based on high-level logic.

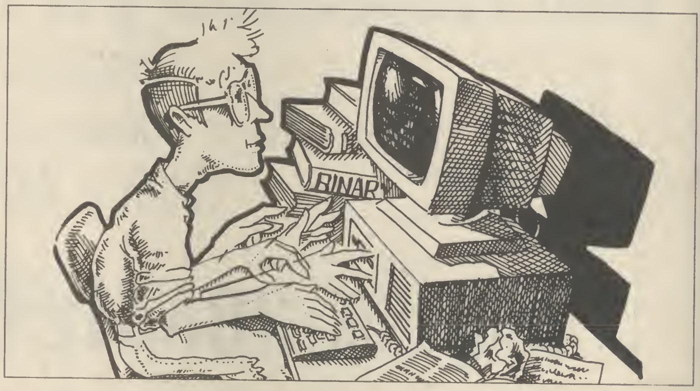
The code given in the box (below) is the algorithm for recursively calculating a factorial that we saw in before, in C; this time it is written in Prolog, a declarative language. The name originally stood for Programming in Logic, but the number of facilities that have been added to the language that do not adhere to the rules of mathematical logic make this a rather contentious assumption! Although factorial (Number, Factorial) looks like a procedure call, and you can treat it as such if you find it easier, it is not. It is a statement or proposition, which the language will attempt to prove true – or satisfy. The definition, after the :- symbol, is a collection of statements which must be proved true if the initial proposition is to be true. The statements declare the situation. This is the declarative method of representing knowledge; knowledge consists of "knowing what" is true.

By contrast, the procedural method for representing knowledge is based on the belief that knowledge can be organised into steps of things to do to solve a problem. Knowledge consists of "knowing how" to do something, step by step. These steps correspond to procedures.

To define a house, you can say that a house (to be very basic) is made up of four walls and a roof: house (four-walls, roof). If you interpret this declaratively, then you can say that if something is a house, then it must have four walls and a roof on top. This is a static description of the situation. If you interpret this procedurally, however, you would say that to make a house, you must make four walls and put a roof on top. This recognises the fact that executing a program causes changes and is a dynamic, not a static process.

To write a program in a declarative language such as Prolog, you do not set out a list of commands to be performed one after another as you would in a procedural programming language. Instead of finding a step-by-step plan, you have to give a description of the problem which the system can work through and a list of what is known about the situation. The statement factorial (1,1) is a given fact; the language is told that this is true, and does not have to prove it, so that it can be used to draw conclusions.

This is the base case – otherwise the recursion would continue until the machine ran out of memory. Because a statement is true if the system is told it is true in the program, or if it can prove it is true by proving that all the statements in the definition of the statement are true, which will again be done by referring to either a fact or a definition, recursion is ideally suited to declarative programming, because the truth of statements is defined recursively. The system uses the facts and rules or definitions given to it, termed the database, to deduce the answers to questions posed to it.



Because the definitions limit the case in which a statement can be true and because everything that is not declared true or proven true is false, the information given to the system constrains the solution that it can produce.

Declarative programming means that you do not have to tell the system how to solve a problem, you simply give it information and the problem-solving mechanism that is built in to the language will deduce what it can from the information, producing solutions as they are deduced.

The code would be called as factorial (3,What), for example. As three is not the same as one, the definition will be called to prove that that there is a factorial of three; the answer is actually produced as a side-effect. NextNumber will be calculated as 3-1, which is 2, and factorial will be called again as factorial (2,NextWhat). Two is reduced to one and the system can then use the given fact, that the factorial of one is one - factorial (1,1). This is passed back up to the previous instance, where it is multiplied by two, giving two. This is the value of NextWhat and is passed back to the original instance of the factorial function and multiplied with three to give What, which is six. This will be returned as a side-effect; what the language is interested in is proving that there is a value that can be placed in the variable What to make the statement factorial (3,What) true. If there was another answer, it would try to find that as well.

The factorial code is given in Prolog and next week we'll look at the language itself. ■

MATHEMATICAL LOGIC

The form of mathematical logic used in declarative programming is founded on three basic principles. An object is equal to itself; no statement can be both true and false; all statements have to be either true or false. This last, known as the Law of Excluded Middle simply means that you cannot draw conclusions when you do not know if your facts are true or false.

To use the complexities of logic in the mechanical methods of a language parser, the world that you represent to the computer has to be simplified. The usual assumption is that if you do not know whether a statement is true you assume it to be false.

Predicate logic, on which Prolog is based, allows statements to be formulated using variables and functions, rather than simply stated in English. Once statements are in a formal language, they can be combined according to fixed rules about the truth and falsity of combined statements; if a statement is that either A or B is true and both are known to be true, the statement is true. If they are both known to be false, the statement is false. Given the formal language and these rules, it is straightforward to translate them into a programming language. In Prolog, every line in the program is a statement which the language will try to prove true.

FACTORIAL(1,1).

```
factorial(Number, Factorial):-
      NextNumber = Number - 1,
      factorial(NextNumber,
NextFactorial),
         Factorial = Number*NextFactorial.
```

● In a procedural language, you tell the computer what to do.

● In a declarative language, you tell the computer what the situation is.

● A declarative language uses logic to work out whether a statement is true and produces answers as side effects.

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THE PD COLUMN

Both the gulf war and the cola war come in for some merciless ribbing on two new animation disks available in the Public Domain. Adam Waring investigates.

Iraq Demo • Amiga • PD Soft • Disk 1021

You might be fed up of seeing it on telly all the time, but the 'Iraq vs the rest of the world' conflict is provoking interest even from the PD writers.

The *Iraq Demo* takes a rather light-hearted view of the whole affair. This may be because it was actually written in December, before the full horror of the war began to result in the death of countless civilians and military personnel. It shows just how ridiculous the whole thing is – people being killed for the price of a barrel of oil…

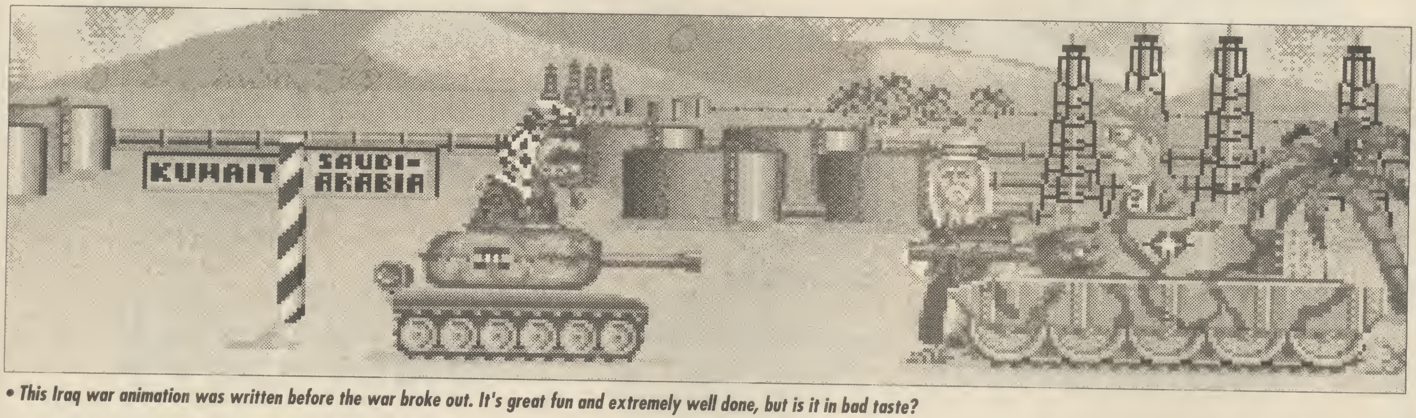
Anyway, whatever your political persuasion, it's certainly an entertaining piece of software. (More entertaining than the recycled news reports on TV, at any rate.)

It starts with Saddam Hussein trundling across the Iraqi border into Kuwait in his tank. A hapless money-counting Kuwaiti is in the way so the tank rolls right over him. Onwards Saddam goes, reaching the Kuwaiti and Saudi Arabian border.

Resistance is rather stronger here, though, and the dictator finds John Major and a strapping great American tank waiting for him. There's deadlock. Both sides wait for each other to make the first move.

Then it happens. Saddam becomes bored of hanging around. He raises his turret and lets rip. It hits Mr Major right in the chops, and our PM sits there, his face comically blackened by the blast. Major retaliates, firing a shell right back where it came from. Now it's Saddam's turn to look silly.

The war escalates. Both sides retreat into the bowels of their tanks, and lob a big bomb at one another. The bombs meet midway. There's a terrific bang, and the whole of the middle east goes up in smoke.



• *This Iraq war animation was written before the war broke out. It's great fun and extremely well done, but is it in bad taste?*

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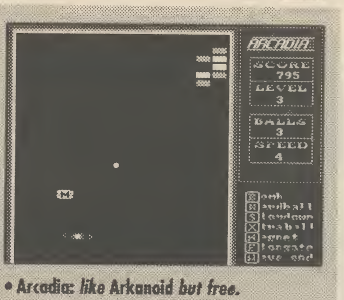
Arcadia • Amiga • Amiganuts • Disk 904

Arcadia is one of those 'new age' breakout clones. It has those classic simple ingredients: a bat, a ball and a wall. You manipulate the bat to keep the ball in play, and try and knock out every brick in the wall.

There are plenty of levels to play through, and on each screen a number of power ups – magnetic balls, extended bats etc – float down to help you on your way. There are a few floating nasties to hinder your progress too. Collision with them doses not automatically mean death, but the effects could lead to your demise. One sort makes the ball shoot off at unexpected angles, which can easily spell your doom should it cause you to miss. Another type of nasty freezes your bat for a couple of vital seconds.

The bricks are not always what they seem to be. Some need to be hit several times before they disappear. Others are indestructible. Should you tire of the levels provided, there is a built-in designer so you can devise your own.

As you may have gathered, *Arcadia* is very much on the same lines as the arcade game *Arkaniod*. It's just as playable, the only real difference being that it's free!



• **Arcadia: *like Arkanoid but free.***

After the holocaust, two angels float out of the craters. They ascend towards the heavens, hands clasped in prayer, to meet God. But who should be sitting on that cloud? It's the Ayatollah Khomeini. Looks like neither of you 'won', chaps!

The whole thing is executed devastatingly well. The graphics are brilliant cartoon-quality caricatures, and it's extremely humorous throughout. Whether it's in good taste or not is for you to decide…

Chicken's Adventure/Cola Wars • ST (1Mb) • Wacko Software • Disk 189

This disk comprises two animations and the sequencer player program you need to run them.

The first animation, *Chicken's Adventure*, depicts the tragic story of a chicken who goes for a stroll one day. It walks towards the viewer with an authentic chicken-like strut, then disappears, only to reappear once more in the distance. Eventually it comes to a sticky end when 16 ton anvil is dropped on its head.

Cola Wars is based on the friendly rivalry between Coke and Pepsi. Set in deep space, a Pepsi laden cargo ship cruises to some far off destination. A Coca Cola fighter appears, engages the Pepsi craft, and blows it out of the sky. So much for the taste test.

Both animations are of the highest quality. You have to see to believe…

Hype! version 1.4 • ST • WolleySoft

You might remember *Hype!* being reviewed in the PD column a few issues back. A Hypercard-style database, its only problem was that you wouldn't have been able to use it unless you had a mono monitor.

Well all that's changed! *Hype* is now available in a colour version. And as it runs under medium resolution the rest of us will be able to use it. Hurrah!

Current versions of *Hype!* can also handle sampled sound and music files. And since further expansion are already being planned it makes sense to send off the shareware fee, so you get to know about the latest incarnations as they happen. ■

WHERE TO GO

WACKO SOFTWARE, Willem Pijperstraat 63, 1077XL Amsterdam, The Netherlands. This Dutch library caters for the ST, and claims to have all the latest European and British PD software. Prices are £1.80, or £1.50 when you order six or more disks, and orders from outside the EEC must add 10 per cent to the total.

WOLLEYSOFT, Humblesknowe Cottage, Ramoyle, Dunblane, Perthshire, Scotland FK15 0BA. A small PD library which develops its own ST software. Products are available direct, at £3 a disk, but are also available through many of the more mainstream PD libraries.

PD SOFT, 1 Bryant Avenue, Southend-on-Sea, Essex SS1 2YD. Telephone 0702 466933/612259. Over 1800 disks for the Amiga. Prices are £2.50 each for up to five disks, dropping by 25p for every additional increment of five you order, to a minimum of £1.75.

AMIGANUTS UNITED, 169 Dale Valley Road, Hollybrook, Southampton SO1 6QX. Tel 0703 785680. Nuts about your Amiga? Then call Amiganuts.– a library that caters for the Amiga, and the Amiga only. Disks start at £1.50.

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THE ATARI ABC

Now, there's a PC-AT compatible that not only solves problems like other AT compatibles, it also solves the one problem that its predecessors have created ... affordability.

Silica Systems are pleased to present the new Atari ABC. The ABC is a 286 AT compatible that runs at over 5 times the performance of the IBM XT. This is achieved by combining the power and speed of a 16-bit 286 processor, with Atari Corp's development experience and engineering capabilities, which use the very latest in design technology. However, the Atari ABC's are available at 'XT prices' and many XT owners will wonder why they paid more, but got less!

The ABC is a reliable, high performance computer, built to exceptionally rigorous standards. It is well designed, to a state of the art specification, maintaining maximum expansion capability for the future. This includes up to 4Mb of RAM and 3 AT expansion slots. Plus, unusually for a PC at this price, the ABC has the ability to install two or three extra drives, with the cabling already inside the CPU.

The ABC has a host of impressive features, all built-in as standard, encouraging simple installation and ease of use. In addition, the ABC's small footprint and quiet operating, mean that you will notice it less on your desk than other PC's. Except, of course, when you begin to take advantage of its AT power.

At its remarkably low price point, the ABC is ideally suited for home, office and educational use and will take full advantage of the vast range of PC compatible software. And, with 12 months FREE on-site maintenance (8 hour response), you can rest assured that your ABC will be fully supported.

The ABC is the latest addition to a comprehensive range of both 286 (8Mhz or 12Mhz) and 386 (16Mhz and 20Mhz) PC's, from the Business Systems Division of Atari Corp. Atari's PC range offers an unsurpassed combination of reliability, compatibility and expandability, with unique features like Atari's 44Mb removable hard disk on their PC4. Return the coupon NOW for further details of the complete range of PC products from Atari's Business Systems Division.

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AVAILABLE: JUNE 90

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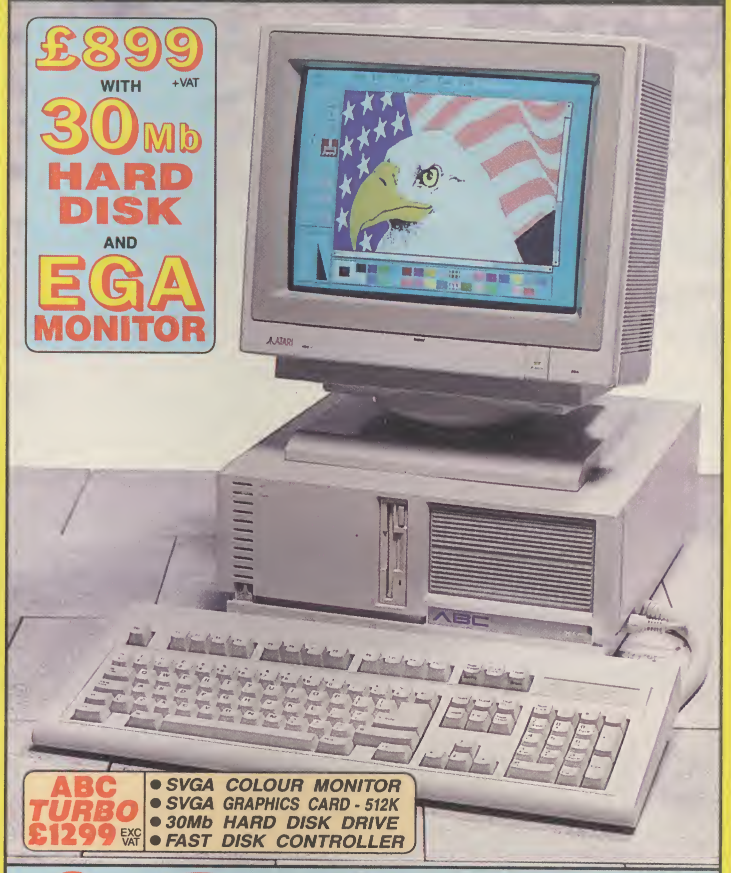

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GAMES WEEK

Neil Jackson gives you the low-down on the latest new games, playing tips, cheats and news.

A quick scan of the "in" bin shows less software house activity this week. But a few publishers are still blowing their trumpets and preparing the world for their future releases. Most notable of these is Domark, which seems to be doing well at the moment, thanks to the success of ***MiG-29 Fulcrum***. The company is busy announcing its upcoming Tengen releases, which it thinks are set to match the successes of the early coin-op conversions.

Waiting in the wings for aN (as yet unspecified) release date is one ***Skull and Crossbones***, just the thing for buckling your swash, and rogering jolly! It's a two-player game, where evil pirates, treasure and adventure are all part of the status quo, and the search for food, drink, booty and revenge dictates the life you lead. Stand by to repel your boarders, and save a few wenches for me! Fight the Arch Magus (nasty hardnut magic-person) and avoid Medusa's gripping gaze. Yo ho ho! It's the pirate's life for 'ee.

Also on the Tengen label, you can look forward to ***Hydra***, a fast-moving action racing-game. As a secret courier aboard a high-powered Hydracraft, you race your way across water to your destination. A cyber-punk postman of the future, you meet all kinds of danger. Boats, jetskis, zeppelins and hovercraft all have something to say about your mission, usually punctuated with explosions. If you can make it through, you'll receive another mission from some government or other with an important message or parcel. There are nine challenges in total, but to complete them all you'll have to make the Royal Mail look like the Pony Express!

In another pipeline, this time at Mirrorsoft, yet more releases are waiting. ***Back to the Future III*** features that time-travelling chappie, Marty McFly in a wild west scenario. Reminiscent of a Boot Hill-meets-Badlands Pete mixture, ***BTTF3*** is full of horses, cacti, indians and guns. Marty's tasks include rescuing his girlie, who's about to do an excellent Lemming impression by careering over a cliff in a wagon. Other strange happenings have a lot to do with pie-plates, being thrown Frisbee-fashion at passing bad guys. Strange stuff, but the word on the street is that the game is fun, fast and addictive. This shows that sequels, and even licensed sequels, can be good news! We'll have to wait until March to see for sure. Until then, check out the rest of Games Week and hang on to your hat! ■

TOP 10 SIXTEEN-BIT GAMES

THIS WEEK	LAST WEEK	CHART WEEK	TITLE	PUBLISHER	MACHINE
1	1	8	*Speedball 2*	Mirrorsoft	ST AG
2	2	3	*Final Whistle*	Anco	AG
3	3	22	*F-19 Stealth Fighter*	Microprose	ST AG PC
4	NE	1	*MiG-29 Fulcrum*	Domark	ST AG PC
5	17	4	*Steve Davis World Snooker*	CDS	ST AG
6	9	42	*Treasure Island Dizzy*	Codemasters	ST AG
7	8	53	*World Class Leaderboard*	Kixx	ST AG PC
8	16	5	*Vigilante*	Kixx	ST AG PC
9	10	33	*Kick Off 2*	Anco	ST AG PC
10	4	8	*Fantasy World Dizzy*	Codemasters	ST AG

For the week ending 2nd February 1991
ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible OT = Other
Chart compiled by Gallup. © European Leisure Software Publishers Association.

Battle Command

Amiga and Atari ST

Hints and tips on Battle Command

If you rushed out and bought this on the strength of last week's review, then perhaps you could do with a bit of help by now. Here's a few hints and tips courtesy of Jason Kennedy from Coleraine...

GENERAL TIPS

After you've finished the majority of a mission and you're trying to make good your escape, take some time to "prep the LZ". This (translated into non-military English) means clear the helicopter's landing zone of all forms of hostile threat. There's nothing worse than copping a shell right up the turret when you're boarding your rescue chopper!

If you're using the Pulveriser cannon, check to see if your binoculars are enabled. Set these to maximum magnification and you'll find you can hit targets at long range more accurately.

Trees and buildings are not just there for target practice. You can use them for cover too!

Enemy aircraft are a top priority, because they won't leave you alone once they've spotted you. Surface to air missiles are the best bet for this, and they can be used against ground targets too. Don't hang around! It's no use stopping and waiting – the enemy will trap you and kill you. Keep moving, and no stopping for picnics!

AIRFIELD ATTACK MISSION

You must destroy all the buildings near the runways and, for good measure, any others that happen to be on the way. Infra-red surface-to-air missiles will do the job, and give you the capability to deal with planes too.

SATELLITE MISSION

At the start, head south-west across the bridge and then follow the blip on your scanner. If you start taking hits on your softer rear armour, spin the tank around and drive backwards. This also gives you the option of returning fire at the nasties which follow you.

When you finally reach the satellite, drive into it slowly.

U-BOMB MISSION

The valley which holds the U-Bomb is protected by a large electrified fence. The pylons which supply the electricity are on the other side of the river. With this knowledge, you should be able to get past. For a spectacular explosion, try destroying the U-Bomb with a Dragonfly missile (but don't expect to win).

KAMIKAZE MISSION

Forget the roads, and pelt off at full tilt in a south-easterly direction until you come to the meeting place of the river and the mountain. Pass through the gap and head straight for the pick-up point, without stopping! You'll need a good supply of surface-to-air weapons and some defensive protection, like the SLAM laser.

HIDEOUT MISSION

Mortars are the only answer. Take a couple of sets, just in case you fluff it. When you reach the circle of mountains, you'll find you can't get close to the target. Use the exterior views at maximum distance to pinpoint the target. Then, with a range of between 500-700 yards, launch a barrage of mortars at your target.

HOSTAGE RESCUE MISSION

Head north-east, but avoid the road. Instead, pass to the left of the mountain canyon (where the road lies) and then cut back into the circular valley where the building is located. Blow it up and the hostage reveals himself (oo-er!). Drive towards him slowly to pick him up and then head for the pick-up point at maximum speed.

DESTRUCTION MISSION

Try to avoid the crossroads wherever possible, as they are heavily defended with gun emplacements. If you're getting low on ammo, but still have work to do, you can con the enemy into wasting buildings for you. Simply park next to a target building, in line of sight of an enemy. As soon as he launches a salvo at you, move out of the way. The shots should carry on to hit the building.

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The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the **Commodore Amiga 500 computer** with **mouse controller** and **TV modulator**, plus four top software titles. The software includes: **'Batman The Movie'** - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

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Flight of Fantasy is the very latest Amiga 500 pack from Commodore, featuring BRAND NEW software releases, to make this the most spectacular A500 pack ever! The pack features the Amiga 500 computer with mouse controller and TV modulator, as well as four top software titles. These include the following:

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RAINBOW ISLANDS:

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CONSOLE ZONE

PLAYING TIPS

We need your tasty tips, crafty cheats and hot hints for any video games available on the Megadrive, PC Engine, Sega Master, Super Famicom, Gameboy, Lynx, Game Gear, NES or Neo-Geo. Send everything to:The Console Zone, New Computer Express, 30 Monmouth Street, Bath BA1 2BW - or fax 0225 446019.

NINTENDO ENTERTAINMENT SYSTEM

Stroll into the final STRIDER level with this passcode: DMCC BGCP CPOD

SEGA GAMEGEAR

We're looking for some playing tips for the Game Gear versions of *Columns, Pengo* and *Super Monaco GP.*

NINTENDO SUPER FAMICOM

We're looking for cheats and tips for *Super Mario World, Gradius III, F-Zero, Bombuzal* and *Pilot Wings* on the Super Famicom.

SEGA MASTER SYSTEM

Start with ten POWERSTRIKE lives by pressing [Down], [Right], [Down], [Down], [Left], [Right], [Up], [Right], [Button I] then [Button I].

NINTENDO GAMEBOY

Thanks to Daniel Zadeh for this *Batman* hint to use the sound test feature. When the title screen appears, press [Upper Right] and [Start].

NEC PC ENGINE

Here's the first five MILITARY MADNESS passwords: Revolt, Icarus, Cyrano, Ramsey and Newton.

ATARI LYNX

An anonymous reader has sent in this *California Games* surfing tip. Destroy the bird by killing yourself twice. When the counter reaches three seconds, crash into the bottom of the screen. The 'are you having fun yet?' bird will fly across. When the counter reaches zero, the surfer will fall from the top of the screen, killing the bird.

SEGA MEGADRIVE

Thanks to Matthew Taylor from Oldham in Lancs for these *John Madden American Football* hints. Do you want to know how to trash the console opposition with a result like 140-0? Here's how! First, pick Denver as your team and make sure that you are kicking off. There is a special trick so that you always stay on offence. When the game starts, press [C] to make your man run to kick the ball, but instead of pressing it again to kick it, just hold the joypad [Left]. When the man kicks the ball, it will always be recovered by your own team. A good trick to ensure your advance down the pitch is to select a play such as 'Hands' then select one of the plays that invoke throwing the ball. On the snap, when the player throws the ball to the bloke at the back, don't throw the ball to any of the bods in the three windows – run with it around the outside of the pack and down the pitch. The opposition who were expecting you to throw the ball won't have time to get back together before you can run the magic 10 yards.

LEMMINGS

Amiga • £24.99

Five... four... three... two... one... Oh no!

Lemmings have got to be the world's most stupid creatures! These vole-like rodents from the Northern and Arctic regions of North America, Europe and Asia, derive their name from the Latin word to bark, presumably because they're all barking mad. Why? Because (as most people who've suffered endless David Attenborough re-runs know), they have a tendency to rush around in great packs, throwing themselves off cliffs to certain doom. Almost human, in a way, isn't it?

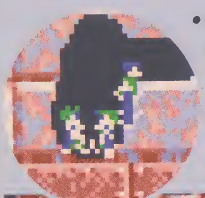
And now, you can improve human-lemmus relations by acting as minder for the dear little creatures. Psygnosis has captured the essence of these suicidal fluffies and bottled it in its new game, simply named *Lemmings.* It consists of many different levels, all featuring a mass exodus of lemmings and plenty of deadly pitfalls. Somewhere near the top of the screen (which generally shows only about half of the actual playing area at once) there's a trapdoor which flops open to allow the nutty lemmings to drop in. Then they wander about aimlessly, blindly strolling into fires, walking over cliffs (their forté), and casually wandering into watery graves.

In the midst of all this auto-genocide, your job is to save them, of course. This is done using a panel of icons which is displayed at the bottom of the screen. Here you find several vital conditions which you can force lemmings to adopt, influencing their behaviour. By simply clicking on an icon and then clicking on a lemming, you can turn a suicidal maniac into a climber, a floater, a bomber, a blocker, a builder, a basher, a digger or a miner. These newly-conditioned lemmings can influence the rest of the population in a number of helpful (and life-saving) ways. The most useful is generally the blocker, who stands there with his arms outstretched, preventing other lemmings passing. He's great for stopping the terminal crazies wandering into swimming pools or falling down holes.

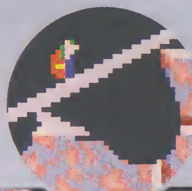
In contrast the bomber is the least helpful, but still a necessary personality. His speciality is exploding, and he does it in a big way. A short countdown, a brief "Oh No!", and kerbooom!, exit one lemming and enter one crater. This guy really goes to pieces! Sadly, the bomber is the only way of removing a blocker and letting the crowd pass. But who cares, he'd have died anyway if it wasn't for you!

The remaining player-controlled lobotimised-lemmings create things which you need to help the pack survive. Bridges and tunnels are often the only way to get past obstacles, to the final goal of the exit doorway. Diggers and miners create shafts for safe descent and the floaters use tiny parasols as parachutes when leaping off great heights.

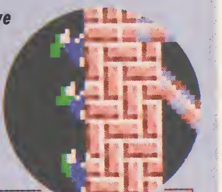
Lemmings' simplistic plot, its small but effective "ant-farm" graphics, and its excellent off-the-wall music and sound effects guarantee it a place in the "Addictive, Amusing and Wonderfully Futile" category. While away the hours attempting to save a race you really don't give a damn about! You'll have a laugh or two, you'll meet some taxing problems and if all goes really badly, well, you can just blow all your lemmings up using the failsafe "Armageddon" button! Sit back and watch all your little geezers pop off one by one, and then get some more and get it right. Original, unforgettable and unmissable – if a little sick!. But we love that, don't we?



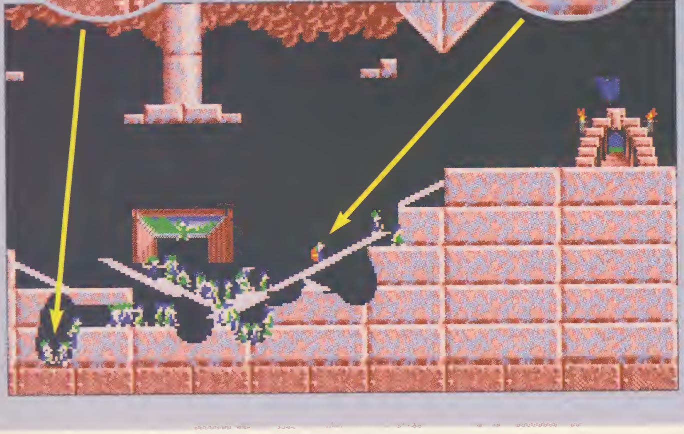
• In the pit of desperation, what is there to do but dig, man? Use the digger-icon to drive a shaft deep into the ground, but don't make it too deep or you'll die in the drop..

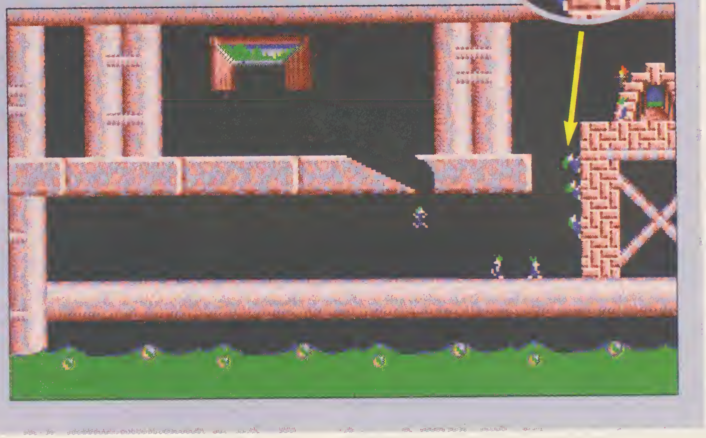


• Bridge that gap with the builder lemming. This hard-working little dude clanks the planks together to make a bridge that would put the Clifton to shame.Oh, the suspension is killing me!



• Lemmings is enough to drive you right up the wall! Climb every mountain and you'll be tired, crotchety and still miles away from the exit. But sometimes, the only way is up!





IMAGES ON THE ST

MAKING THE MOST

So you've used your ST for desktop publishing and graphics, but why not go one stage further with scanned images? Mark Higham shows you how to get value for your money.

As the ST becomes increasingly acceptable to the professional DTP and graphic design market, there has never been a greater need for photograph-quality images. With a number of budget models now available, scanning is no longer restricted to the professionals.

The scanner is an electronic device that connects to your ST (usually via the cartridge port) and enables you to capture copies of black and white photographs, line drawings, text – in fact any image.

Several types of scanner exist but they all work by shining light at the image to be captured and measuring the concentration of reflected light. Once stored, the information making up this digital image is exactly like any other picture and can be manipulated using Degas, Neochrome or any paint package.

Scanning on the ST has taken some major leaps forward in the last few years. It's no longer used simply to scan images and import them into a DTP package. Now you can get your hands on some OCR (Optical Character Recognition) software and get into some really heavy business. This is clever software that can interpret text captured via a scanner and recognise it as true words. Instead of ending up with a pictorial representation of a page of text, you get a file which contains ASCII values of the scanned words!

Although the most common scanning device is the hand scanner – a plastic box which fits in the hand and is passed over desired images – there are also the incredibly cheap print head scanner and the up-market flat bed scanner.

The printhead scanner consists of two fibre-optic cables emanating from a box attached to the ST's cartridge port. They clip onto the printhead mechanism of a dot matrix printer. As this printhead can be stepped at precise distances along a page, it can be used to transport the fibre-optic cables in a defined manner over photographs, text and other images.

Next rung on the price ladder is the hand scanner. Slightly larger than the ST mouse, a hand scanner has a clear plastic window slit on the underside which emits and measures light.

They are easy to operate; you simply pass the device over any image and it's captured. Quality of results depends upon the width of the scanning window and the dot resolution of the image capture. A typical width is around 100mm with resolutions between 100 and 200 dots per inch (dpi). With a little perseverance – and a steady hand – the hand scanner provides excellent results with high resolution scans possible.

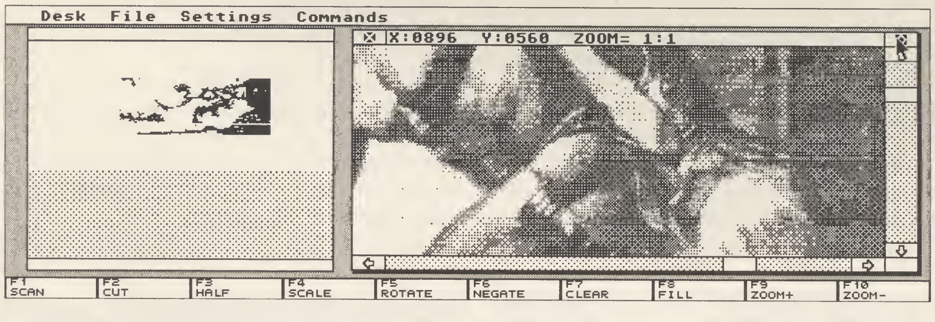
At the top of the range, there's the flatbed scanner. This device is reminiscent of a small photocopier. Lift the lid, lay your image on the scanning surface, close the lid, press a button and scan. Seconds later, an extremely high resolution captured image appears on your ST screen. The flatbed scanner is expensive but provides unbeatable results.

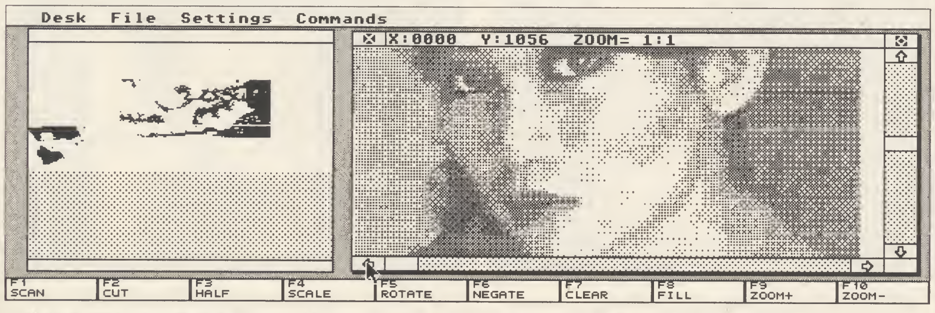
IMG SCAN

£49.99 • Ladbroke Computing • All STs • 0772 203166.

This is the cheapest scanner available. The device connects to your dot matrix printer and claims to produce images at a resolution of 1,000dpi, though the output doesn't support this. IMG Scan consists of a two inch square plastic box which connects to your cartridge port, and several feet of fibre optic cable which clips onto the printhead of any dot matrix printer. Attaching it to the printerhead can be a nightmare and with some printers your best option is to take the print head off altogether, although even then it's hard fixing it properly. Unless you can get the scanner properly attached to your print head you won't get anywhere.

Once IMG Scan's hardware is in place, the accompanying scanning/editing software has to be configured to your printer and the resolution of the scan you wish to perform. A few mouse clicks later, your scan gradually builds up on the screen. You can select from a range of scanning resolutions from 75 to 1,000dpi with varying degrees of success. Penalties for choosing the higher resolutions are increased scan time, and greater memory usage.





• *These results were achieved using the Kempston Daatascan: one of the best of the 'easy-to-use' hand scanners.*

The printhead scanner provides surprisingly good results so long as you're prepared to spend vast amounts of time configuring it to your printer. Though it's superbly priced as an entry-level scanner, it's maddeningly frustrating to use and the output quality is far from wonderful.

GENISCAN

£189.99 • Datel Electronics • All STs • 0782 744707.

This is the cheapest hand-held scanner on the market, offering a resolution of 200dpi and a scanning width of 105mm. While Geniscan has four resolution settings ranging from 100 to 400dpi, the accompanying software can only cope with resolutions of 100 and 200 dpi.

There's a photograph/letter switch to select between grey scales or monochrome respectively, and a thumb wheel to adjust the brightness.

The Geniscan is a scanner of sound construction that works well under a variety of conditions. Unfortunately, there is no contrast control though you can vary the brightness, but scans sometimes appear rather wishy-washy. As the cheapest hand scanner, however, the Geniscan is well worth a look.

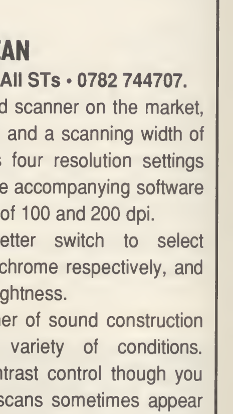
DAATASCAN

£229 • Kempston • All STs • 0234 855666.

Kempston's Daatascan has been on the market for a couple of years and is justly popular. The software accompanying it has recently been overhauled to produce an editing package of exceptional quality. The device scans across 105mm with a resolution of 200dpi.

The results are excellent, offering plenty of contrast even in dither mode. Once you have captured an image, the software offers scope for editing, reducing, enlarging, inverting, rotating or repositioning images.

The Kempston Daatascan is a hand scanner that must be recommended. Powerful and with more ergonomic features than you can shake a stick at, the device has to top the mid-price list for prospective scanner users. ■

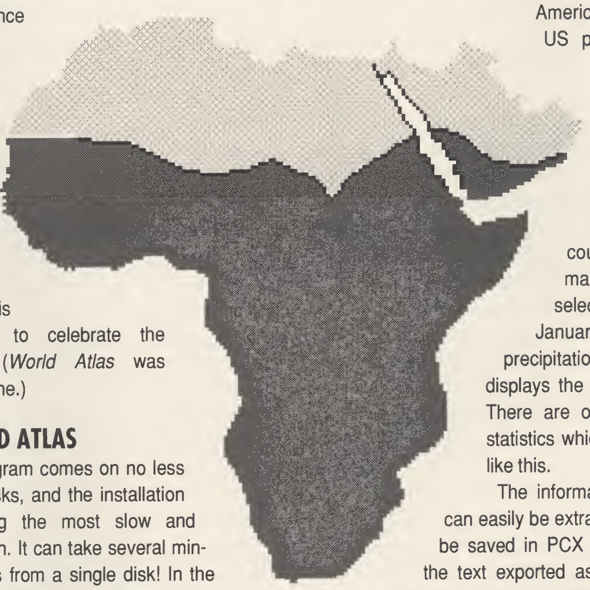


ON TOP OF

A computer makes an ideal interactive atlas. Stuart Anderton explores two top PC mapping programs and looks at an Amiga offering from down under...

With today's high resolution colour graphics, copious amounts of memory and huge hard drives, PCs are ideal tools for 'interactive books'. And a logical first step in that direction is to digitise an atlas.

Most people refer to an atlas rather than reading it, looking up the location of an unfamiliar city or working out just how far away the holiday resort is. With that interactivity in mind, two programs, *PC Globe* and *World Atlas*, have been designed to bring the convenience of the computer to the map. Both programs are American in origin and therefore give such useful information as visa requirements for England and the 'fact' that June 10th is a national holiday to celebrate the Queen's birthday! (*World Atlas* was responsible for that one.)



WORLD ATLAS

This gargantuan program comes on no less than 19 5.25-inch disks, and the installation procedure is among the most slow and tedious I've ever seen. It can take several minutes to copy the files from a single disk! In the end I aborted the installation and used XCOPY instead, saving half the time. This installation problem is shared by all Software Toolworks' programs – it really should take a close look at the program it uses.

Once installed in 6Mb or so of hard disk space, typing WA takes you into the program. The first thing you notice about *World Atlas* is its very subtle use of colour. It produced shades on my EGA monitor that I had never seen before, making the relief maps look very close to a real atlas page. The opening screen is a map of the globe using a projection which gives round edges to the map. Clicking on a continent takes you to a more detailed map and from the regional maps you can select individual countries. The country maps are extremely detailed and accurately drawn.

A text drop-down menu provides you with a list of topics like 'People', 'Economy' and 'Government'. Selecting these produces a scrollable list of facts. The window the list appears in cannot be resized or moved, and the list is badly punctuated and difficult to understand in places. The information is geared up for the American traveller, with US phone numbers for embassies and tourist offices, details of visa requirements and inoculations and so on.

As well as choosing countries from the main screen, you can select statistics like January temperature or precipitation and a world map displays the chosen information. There are only a dozen or so statistics which can be displayed like this.

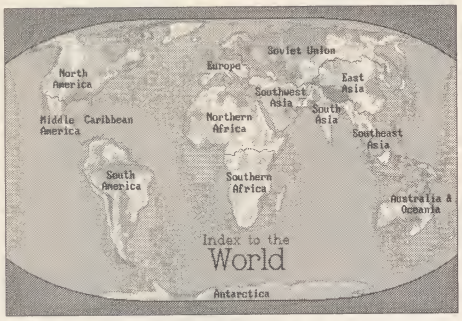
The information in *World Atlas* can easily be extracted. The maps can be saved in PCX or TIFF format and the text exported as ASCII files. *World Atlas* is indexed, with places and facts available from a menu; selecting a topic takes you to the page which is displaying the information.

PC GLOBE

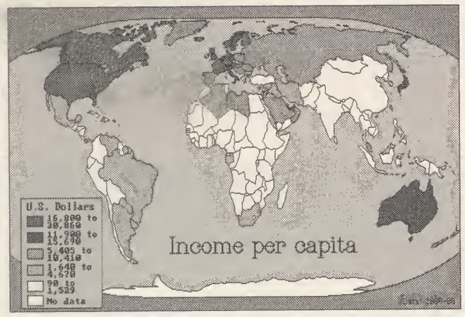
PC Globe is a very different beast; it comes on five disks and the installation program is quick and easy. Once up and running, you are presented with a map of the world. As you move your mouse pointer over it the name of the country is displayed.

Control is by drop-down menu, although there is a

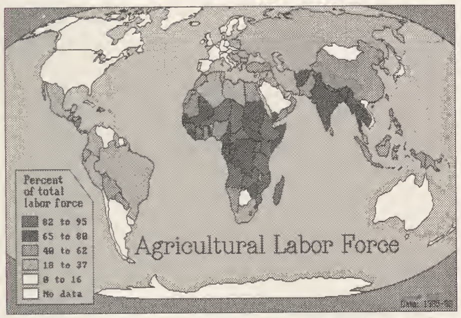
WORLD ATLAS


Soviet Union
Europe
North America
East Asia
Southwest Asia
South Asia
Middle America
Caribbean
Northern Africa
Southeast Asia
South America
Southern Africa
Australia & Oceania
Index to the World
Antarctica

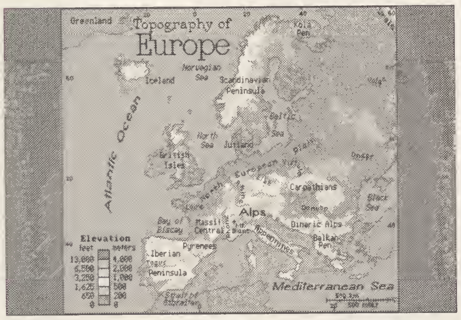
• *The opening screen of* **World Atlas**; *click on a selected continent to zoom in.*


Income per capita
U.S. Dollars
16,800 to 30,850
11,900 to 15,690
5,405 to 10,410
1,640 to 4,670
90 to 1,529
No data

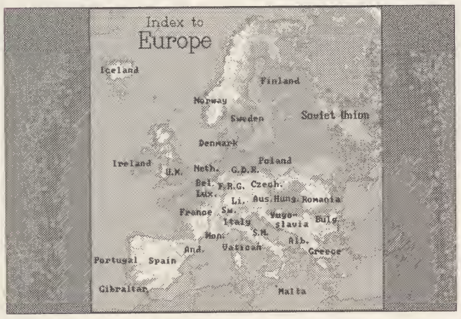
• **World Atlas** *contains mapped data, but only on a world level.*


Agricultural Labor Force
Percent of total labor force
82 to 95
65 to 80
40 to 62
18 to 37
0 to 16
No data

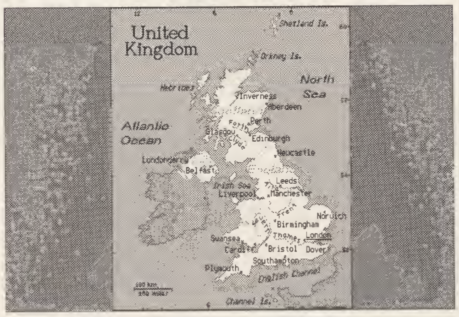
• *Although very few topics are mapped in* **World Atlas**, *there are some obscure ones.*


Topography of Europe
Greenland
Iceland
Norwegian Sea
Scandinavian Peninsula
Atlantic Ocean
North Sea
Jutland
Baltic Sea
British Isles
Bay of Biscay
Massif Central
Alps
Pyrenees
Iberian Peninsula
Carpathians
Dinaric Alps
Balkan Pen.
Black Sea
Mediterranean Sea
Elevation

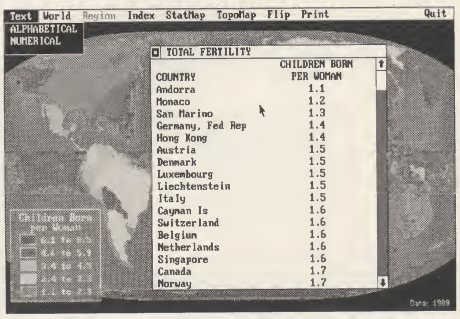
• *If physical geography's your bag, then choose* **World Atlas.**


Index to Europe
Iceland
Finland
Norway
Sweden
Soviet Union
Denmark
Ireland
U.K.
Neth.
G.D.R.
Poland
Bel.
F.R.G.
Czech.
Lux.
Li.
Aus.
Hung.
Romania
France
Sw.
Yugoslavia
Bulg.
Italy
S.M.
Alb.
Mon.
And.
Vatican
Greece
Portugal
Spain
Gibraltar
Malta

• *From here you can select information on individual countries.*


United Kingdom
Shetland Is.
Orkney Is.
North Sea
Hebrides
Inverness
Aberdeen
Perth
Glasgow
Edinburgh
Atlantic Ocean
Londonderry
Belfast
Newcastle
Irish Sea
Leeds
Liverpool
Manchester
Norwich
Birmingham
Swansea
Cardiff
Bristol
London
Dover
Southampton
Plymouth
English Channel
Channel Is.

• **World Atlas'** *country maps are very detailed*.


Text
World
Region
Index
StatMap
TopoMap
Flip
Print
Quit
ALPHABETICAL
NUMERICAL
Children Born per Woman
Data: 1989

TOTAL FERTILITY

COUNTRY	CHILDREN BORN PER WOMAN
Andorra	1.1
Monaco	1.2
San Marino	1.3
Germany, Fed Rep	1.4
Hong Kong	1.4
Austria	1.5
Denmark	1.5
Luxembourg	1.5
Liechtenstein	1.5
Italy	1.5
Cayman Is	1.6
Switzerland	1.6
Belgium	1.6
Netherlands	1.6
Singapore	1.6
Canada	1.7
Norway	1.7

• **World Atlas** *does contain statistical information in list form.*

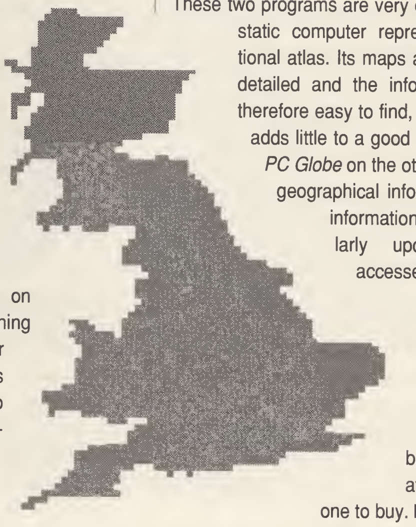
THE WORLD

mouse-controlled point and shoot mode. You can zoom in to regions and are presented with an outline map of each country. You can use a paint-package like palette to add colours to countries to generate your own maps.

Selecting an individual country leads you to the maps. These are less detailed by far than the *World Atlas* ones, but in some areas they contain more information, such as the places of interest screen (which reveals that the most interesting thing in Kuwait is a swamp). These screens also contain the flag of the country and the program makes a valiant attempt to play the national anthem on the PC's speaker. *God Save the Queen* brought tears to the eyes of the *Express* office...

The maps, though, are not the key to *PC Globe*; that is the database. *PC Globe* holds thousands of facts on every country in the world on everything from potato production to the number of dentists per capita. And to make this information useful it can map it onto world or regional maps, or do comparisons between specified countries. Thus a map could contain information about the relative oil production of the OPEC countries for instance, or literacy rates in the Third World. Comparison bar charts can also be generated. If the information is in there it can be extracted graphically.

This is the kind of tool which would have made geography essays a doddle. 'Compare and contrast the economies of the USA and USSR' would have taken three mouse clicks and a few minutes poring over print-outs, instead of hours in the library.



PC Globe can do other tricks too. It has a built in exchange rate converter (with reasonably up-to-date rates) and can tell you exactly how far away any city is, in what compass direction, and what the time is there. The data can be extracted and the comparison maps you generate can be saved in PCX format.

WHICH WAY?

These two programs are very different. *World Atlas* is a static computer representation of a conventional atlas. Its maps are beautifully drawn and detailed and the information is indexed and therefore easy to find, but in the final analysis it adds little to a good old-fashioned desk atlas. *PC Globe* on the other hand is an interactive geographical information analysis tool. Its information is up-to-date (and regularly updated) and can be accessed in the way you want.

If you want a gee-whizz program which shows off the graphical capabilities of your PC at their absolute best, then buy *World Atlas*, but if it's a tool you're after, *PC Globe* is the one to buy. ■

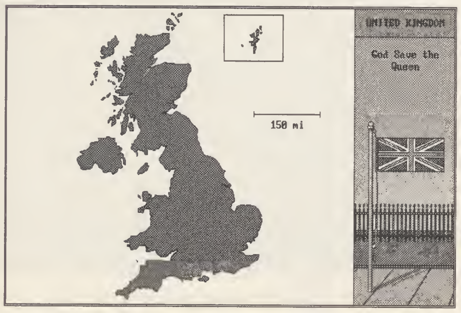
World Atlas *costs £52.17 +VAT from Software Toolworks on 0444 831761. It is also available in an enhanced CD-ROM version, priced £99.99 +VAT.* World Atlas *requires a hard disk and an EGA or VGA display.*

PC Globe *costs $69.95 from PC Globe Inc on 0101 602 730 9000. It has no special requirements, but EGA, VGA or Hercules is recommended.*

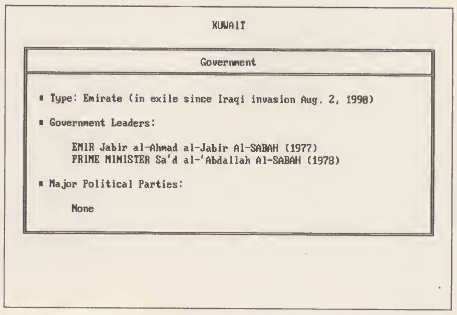
FROM THE LAND DOWN UNDER

Both *PC Globe* and *World Atlas* are restricted to the PC. At present decent atlas software for the other home micros is few and far between. One which arrived recently for the Amiga is the *Australian Graphic Atlas*. Hailing, perhaps unsurprisingly, from Australia, this is a set of maps of (you guessed it) Australia. It is a sort of mini World Atlas, with separate maps for each state, pictures of the capitals and details of relief, minerals, wildlife and aboriginial lands.

The maps are linked together with AmigaVision, producing a set of maps which can be navigated just by clicking the mouse. All the maps are stored in IFF format, so they can easily be used for other projects, and pictures of wildlife are also included in the hypermedia links. And yes, there is a picture of a kangaroo.



• *We considered covermounting a tape so you could hear this, but thankfully you've been spared.*



KUWAIT

Government

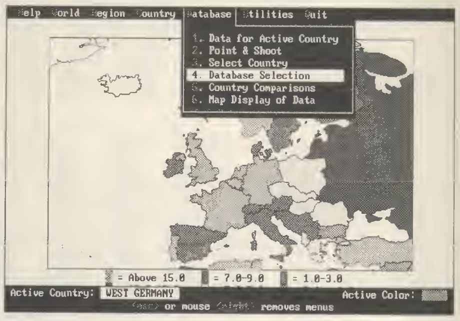
- Type: Emirate (in exile since Iraqi invasion Aug. 2, 1990)
- Government Leaders:

  EMIR Jabir al-Ahmad al-Jabir Al-SABAH (1977)
  PRIME MINISTER Sa'd al-'Abdallah Al-SABAH (1978)
- Major Political Parties:

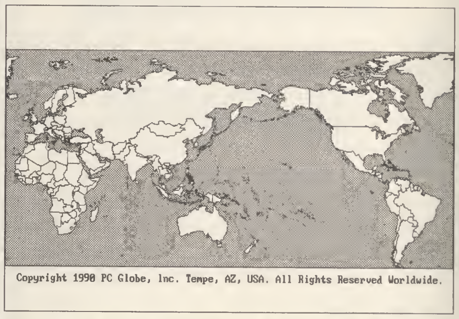
  None

• *Well up to date: the Iraqi invasion documented in* PC Globe.

PC GLOBE

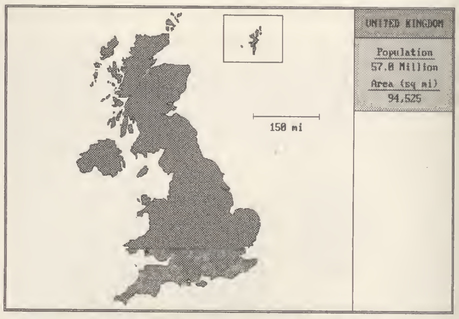


• PC Globe *is controlled via drop down menus.*



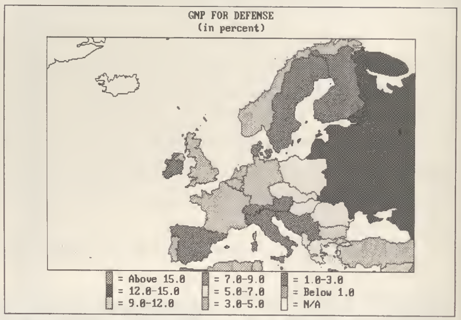
Copyright 1990 PC Globe, Inc. Tempe, AZ, USA. All Rights Reserved Worldwide.

• *You can alter the orientation of the world map in* PC Globe. *here is the planet as seen from Japan.*

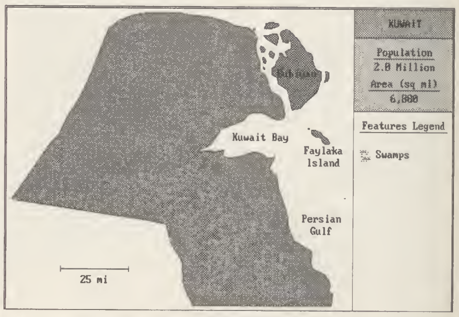


UNITED KINGDOM
Population
57.0 Million
Area (sq mi)
94,525

• PC Globe's *basic map displays borders and limited information.*



• *Where* PC Globe *comes into its own is the ability to plot statistical information on maps.*



KUWAIT
Population
2.0 Million
Area (sq mi)
6,880

• *Kuwait, famous for its, er, swamps.*

SAMPLE SOME AMIGA MUSIC

MAKING THE MOST

Sampled sounds create much of the pop music we hear today. If you fancy yourself as a music maker – follow Damien Noonan's advice on software and you should be half way there.

For the purposes of this article at least, we'll break the whole varied music scene up into two types of programs: samplers and sequencers. We'll start with samplers because a sample acts as a 'building block' for tunes: it is a slice of sound stored as digital information by a computer or electronic instrument.

It's samples that have created pop music as we know it today. The progress of sampled music from dogs barking in tune on *That's Life* to creating chart hits in your bedroom à la Candy Flip's Strawberry Fields, has been rapid.

An Amiga sampler is a combination of a hardware gadget that takes in sound via a cable from a hi-fi or a microphone and slices it up into digital information and software that allows you to mess around with the sound afterwards and, by repeating bits of it, make it into a tune. Just a few seconds each of drums, piano and vocals is enough to make an adequate House tune.

There are some good complete hardware and software sampling packages around. *Technosound* (New Dimensions, £34.99), is a good, cheap start if a little basic and comes with a cassette tape tutorial. *Master Sound* (Microdeal £39.95) is good quality, if not perfect for editing. The king of them all is the Audio Engineer package (£199 from HB Marketing) which has the best piece of hardware around.

The excellent software that makes up the Audio Engineer package, *AudioMaster 3* (Oxxi-Aegis), is available separately and in a number of variously-priced deals. It's incredibly good, combining clear design and great ease of use with a huge range of editing features. The quality and accessibility of this sampler, together with the way you can easily build whole tunes from just a few brief samples looped and mixed, give this a quality that captures the spirit of modern electronic music. House chart hits created just using your Amiga are only a step away.

The Soundtrap III hardware (Omega Projects, £38) is a minute piece of kit good for beginners to use with the Audiomaster software, while the Mk 2 Stereo Sampler and Audiomaster combo is very powerful one (Trilogic, £99).

SEQUENCERS

A sequence is a song or tune described simply as a list of notes (or 'events') happening at a particular time. The principles behind sequencing are actually very simple: a tune is built up simply by saying when something happens and what that thing is – a drum beat, a guitar chord, a bass note. If you think about it, music is quite mathematical: beats per second, beats in a bar, etc.

Sequencers tend to have three ways of showing a tune: just as numbers, which is very hard work; graphically, which is a simpler and clearer way of showing the same thing; and in traditional notation, which is no use to you unless you understand crotchets and minims, but might be vital if you are used to real music.

The simplest sequencers play samples just through your Amiga, so you can make tunes very easily. *Sonix* (Aegis) is a classic and still very popular, so buy it where you can. *TFMX Soundtool* (Software Business £44.95) is an excellent tool for doing this sort of music for games and programming.

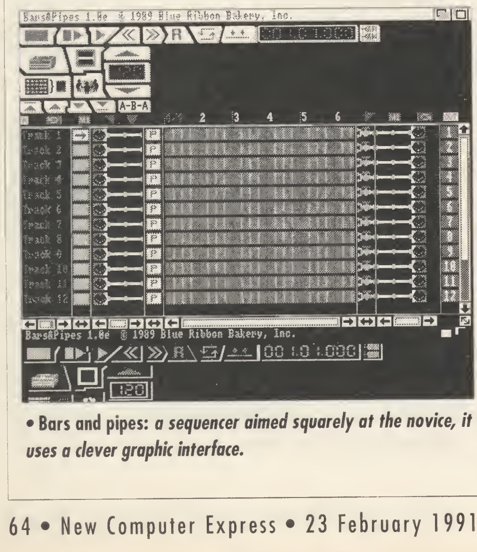
Apart from that look in PD libraries. Sample sequencing is probably the best supported area in the Public Domain. Most of them cannot sequence MIDI instruments but rely instead on sound samples. *Soundtracker* is synonymous with his kind of sample sequencer, but was not PD: but versions of it are PD (*Noisetracker* and the latest, *ProTracker*). MED 2.12 can also do this, but MIDI seems to be better implemented. New PD music programs are being released all the time – for instance MED 2.13 is now available. PD disks containing samples and the like are numerous.

AND MIDI

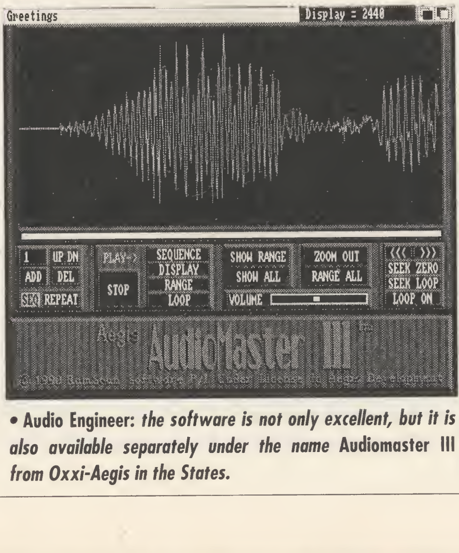
MIDI sequencers open up a whole new can of worms and are really the sharp end of the music business. MIDI is a system used by computers to talk to electronic instruments such as drum machines and synthesisers. Simply invest in a MIDI interface (about £30-£40) and you can use this system, so when you write a tune in a MIDI-compatible sequencer, it will play using the sounds from the synth rather than samples from the Amiga.

MIDI sequencing is another very competitive area, but *Music-X 1.1* (Software Business, £149.95) is doing its uttermost to dominate and is a thoroughly excellent and very flexible program. A challenge is provided by *Bars 'n' Pipes* (Blue Riband Bakery, £219.95) with its bizarre but accessible graphic style. At the beginner's end it's a toss-up between *Trax* (Passport, £99) which is cleverer than *Tiger Cub* (Dr T, £99) but can only use MIDI, not Amiga samples: and the Junior version of *Music-X* (£75). Really, it's pretty much equal. ■

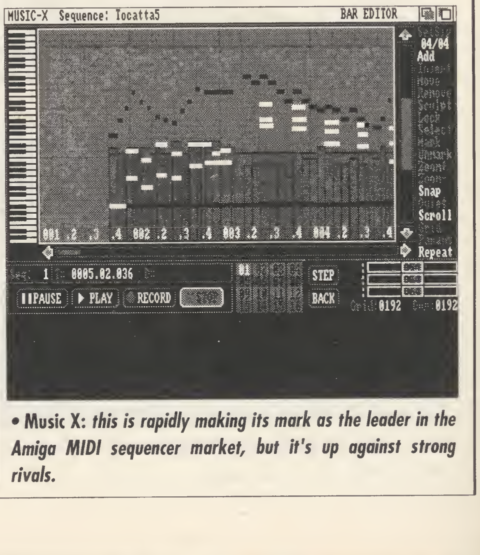
Damien Noonan is editor of Amiga Format *magazine. These articles are reprinted from his book,* Get the Most Out of Your Amiga, *available from Future Publishing Ltd, The Old Barn, Somerton TA 11 7BR. It costs a very reasonable £9.95.*



• Bars and pipes: *a sequencer aimed squarely at the novice, it uses a clever graphic interface.*



• Audio Engineer: *the software is not only excellent, but it is also available separately under the name* **Audiomaster III** *from Oxxi-Aegis in the States.*



• Music X: *this is rapidly making its mark as the leader in the Amiga MIDI sequencer market, but it's up against strong rivals.*

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447 RECREATION GAMES Otherllo etc.
446 BIONIX Great PD Shoot Em Up
283 PSEUDO COP Shoot Em Up
282 POPEYE LCD GAME Yes, well Ermm ..
280 MECHFORCE Strategy War game
276 HOLY GRAIL ADVENTURE Text Only

AMIGA BUSINESS PD

593 BANKIN Handles your accounts
592 WORDWRIGHT,AMIGASPELL Wordpro.
591 QBASE & SPREAD database
590 CLERK A Clerk program ? I dont Know
589 JOURNAL Keep track of your Bank !
496 VISICALC Great spreadsheet !
495 RIM DATABASE Powerful PD Database
358 UEDIT WORDPROCESSOR and more
434 AMIBASE A simple 8 field Database
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AMIGA UTILITIES

602 ELECTROCAD DEMO PCB Designer
600 C-LIGHT - PD version of ray-trace prog
505 MAC CLIPART Great for DTP,etc...
494 ARP 1.3 AmigaDos Replacement Prog
466/467/468 Countach ClipArt - More DTP
464 Sozoban C - With ZC,A68K Asm ...
460 ICONMANIA Brilliant Icon Utils disk
378/379/380 C MANUAL (CLI) Just Superb
377 NORTH C - Compiler for the Amiga
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114 INTROMAKER creates scrolly demos

MUSIC UTILITIES

118 NOISETRACKER 2.0 latest version MIDI
119/120 ST-01,ST-02 Samples disks
122/123 ST-90,ST-91 New Samples disks
117 FUTURE COMPOSER chip music maker
459 JAMCRACKER Great Sequencer
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572 NEWTRONS MB Inc. the Headbanger !
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542 SILENTS FULL POWER House It up !!!!
532 CRUSADERS FEW TUNES ... Awesome !
531 CAPTURED IMAGINATION by 4-Mat
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424 SOUND OF SILENTS Get this one !!!
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245 SCOOPEX BEAST from the game
242 100 C-64 TUNES Remember the 64 ?
227 JARRE DOCKLANDS Music and slides
425 DIGICONCERT 6 12 minutes of House
225 DIGICONCERT 5 The Power,Touch Me
224 DIGICONCERT 4 LeilaK and more ..
223 DIGICONCERT 3 Another 12 Mins !!
186 DIGICONCERT 2 This is Great as well!
220/221 DMOB 4 Ten superb House Trax
218 KEFRENS JUKEBOX Great music disk
133 CRUSADERS BACTERIA A Classic,Get It

AMIGA DEMOS

612 ULTIMATE FX by Goldfire - V.Good !!!
608 CRUSADE$RS Jan-91 Eurochart !
606 CRUSADERS do Genesis ! Brilliant !
601 HORIZEN MEGADEMO Yummy Stuff !
164 MENTAL HANGOVER Still the BEST !!!!
583/584 MAXIMUM OD Superb Vectors !
563 CULT MEGADEMO 2 Very Impressive
549 SAE 56 Cryptoburner HFTSO demo !!!
546 FRAXION FUTURE VISIONS Get This !
545 SPACE DELIRIA by Crusaders BRILLIANT
540 TROPICAL SUNSET and more stuff
530 ANARCHY MADNESS + more demos
512 DEEP SEA DEMO by Intuition
504 NETWORK PARTYPACK Great !
473 WRATH OF DEMON DEMO
453 EPIC PREVIEW This is Wicked, Get It *
445 4-MAT CES MUSIC Great music disk
437 ANARCHY CES PACK More demos
426 CRIONICS NEVERWHERE Just Superb !
257 CRIONICS DEMO with Madonna !
423 COOL FRIDGE Plasma demos FX
258 CANDYLAND 11 Lots of GREAT demos
254 TRIP TO MARS Fab vector gfx demo
252/253 BUDBRAIN DEMO 1 Hilarious !!!
142/143 DEMO PACK 3 Cebit90,Coma
109/110 DEMO PACk 2
107 Vangelis Demo 1Meg Great !!!
101/102 DEMO PACK 1 Brill Old demos !

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570 NIK WILLIAMS BROADCAST Superb !!
520 TOTAL RECALL Slides from the film
493 VAX PICTURE SHOW Great !
491 SPACEPICS Nice Dpaint pictures
488 TRAVELLER SLIDESHOW Very good
484 COLOR CYCLES Great Dpaint stuff
463 COUNTACH II Fantasy Art show
462 COUNTACH I Fantasy Art show
461 FLINTSTONES ! Wilma and Fred !
454 NIGHTBREED Spooky slides from film
205 AGATRON 8 SLIDES Brill spacee slides
200 ROGER DEAN SLIDES Digitised HAM
191 FORGOTTON REALMS Nice Fantasy
183 NAGEL PICTURE SHOW Hi-Res Arty
158 AGATRON 6 SLIDES Totally Brilliant !
139 REAL 3D SLIDES This is Superb !
137/138 SILENTS SLIDESHOW Brilliant !
134/135 DIVINE VISIONS More Fantasy

AMIGA ANIMATIONS

578/579/580 STATION AT KHERNE (2 MEG)
575/576/577 LOST IN SPACE (2 MEG)
557 TIMEWARP Demo from Dragons Lair *
508 BUSY BEE Fab ray-trace anim *
474 SPACECHASE Great looped anim *
458 STAR TREK FLEET MAN. The BEST ! *
457 TRON/SPACESHIP More by T.Richter *
456 STEALTHY 2 Cutsey Jet Fighter Anim *
455 LOTUS/JET/POOL T.Richter 512K Anims
452 ENT.LEAVING DOCK Another Classic *
212 STAR TREK Great 512K anims by TR.
198 THE RUN The lotus car chase *
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398 FRACTAL FLIGHT Flight thru a Valley *
207 LUXO TNGR Funny lamp anim *
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b) Clitheroe, Lancs
c) Bath, Avon
d) Birmingham, Alabama

2) Which town has the last remaining private telephone exchange in Britain?

a) Margate
b) Paris
c) Kingston upon Hull
d) Lower Peover

3) What is the phone number for *Express* from Montpelier?

a) 19-44 225 442244
b) 0225 442244
c) 0552 224422
d) 19-45 552 242424

4) Which costs the most to phone on a Saturday?

a) Amsterdam
b) Leyland
c) Innsbruck
d) Adelaide

5) What software company from a town somewhere up north where they used to build lorries and buses has the telephone number 0772 452414?

a) Ferretsoft
b) Sector Software
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1 ☐ **2** ☐ **3** ☐

4 ☐ **5** ☐

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★ ***Mass storage:*** credit card sized memory cards (32K or 64K or 128K RAM).
★ ***Display:*** Graphics LCD, supertwist technology, MDA compatible, 40 columns x 8 lines, 240 x 64 pixels (with the option to window a full 80 x 25 character display). Keyboard controlled contrast.
★ ***Peripherals:*** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
★ ***Size:*** 8″ x 4″ x 1″ (200mm x 105mm x 29mm).
★ ***Weight:*** 495 grammes (with batteries).
★ ***Applications:*** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

5 BUILT-IN APPLICATIONS TO GET YOU ORGANISED!

To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

TIME MANAGER

More than just an electronic diary, the Portfolio Time Manager enables you to plan your appointments via a comprehensive calendar and diary. It can even be programmed to sound an audible alarm at specific times to remind you of important appointments.

CALCULATOR

Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial, power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, at the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

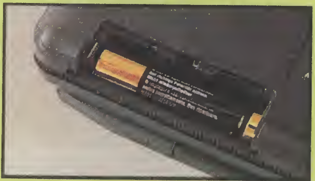
The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

SPREADSHEET

For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

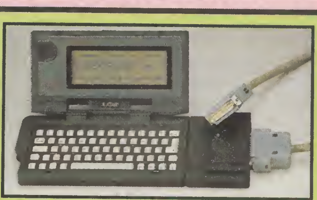
MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.



POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.



INTERFACES & PERIPHERALS

Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

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CREDIT PAYMENT TERMS: Silica are licensed credit brokers - details on request.

Before you decide when to buy your new Atari Portfolio, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Portfolio, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new Portfolio products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is a new division of Silica Shop, the UK's leading Atari specialists. This new division has been established to provide a service to the more serious home user, as well as to business and education purchasers. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature and begin to experience the "Silica Systems Service".

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Now you can slow down the action to your own pace. Easily adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!
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Simply press a key and the program will continue where you left off.
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At the press of a key now you can view the Machine Status, including Fast Ram, Chip Ram, RamDisk, Drive Status, etc.
- **POWERFUL PICTURE EDITOR**
Now you can manipulate and search for screens throughout memory. Over 50 commands to edit the picture plus unique on screen status "overlay" shows all the information you could ever need to work on screens. No other product comes close to offering such dynamic screen handling of frozen programs!!
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With Sound Tracker you can find the complete music in programs, demos,etc. and save them to disk. Saves in format suitable for most track player programs. Works with loads of programs!!
- **AUTOFIRE MANAGER**
From the Action Replay II preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power? Joystick 1 and 2 are set separately for that extra advantage!
- **DISKCODER**
With the new "Diskcoder" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. 'Tagged' disks will only reload when you enter the code. Very useful for security.
- **PREFERENCES**
Action Replay II now has screen colour preferences with menu setup. Customise your screens to suit your taste. Very simple to use.
- **DISK MONITOR**
Invaluable disk monitor - displays disk information in easy to understand format. Full modify/save options.
- **DOS COMMANDS**
Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.
- **DISK COPY**
Disk Copy at the press of a button - faster than Dos Copy. No need to load Workbench - available at all times.
- **BOOT SELECTOR**
Either DF0 or DF1 can be selected as the boot drive when working with Amiga Dos disks. Very useful to be able to boot from your external drive.

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REMEMBER AT ALL TIMES YOU ARE INTERROGATING THE PROGRAM IN IT'S "FROZEN" STATE WITH ALL MEMORY AND REGISTERS INTACT - INVALUABLE FOR THE DE-BUGGER OR JUST THE INQUISITIVE!

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